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PART A
IONOSPHERIC DATA

ISSUED
MARCH 1956

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F139
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
23 Mar. 1956

IONOSPHERIC DATA

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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above, plus an additional symbol, R: "Scaling of characteristic is influenced or prevented by absorption in the neighborhood of the critical frequency," (May 1955). Also, beginning with January 1956, additional meanings are assigned to T: A smoothed value which better fits the observations, replacing a doubtful or clearly inconsistent observed value; and to U: f_{oF2} minus f_{oF1} is 0.5 Mc or less (used with (M3000)F2).

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, R, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of f_{oF2} (and f_{oE} near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of $h'F2$ (and $h'E$ near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For f_{oF2} , as equal to or less than f_{oF1} .
2. For $h'F2$, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

At night B for fEs is counted on the low side when there is a numerical value of foF2; otherwise it is omitted from the median count.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.
2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.
3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice

in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

- a. Differences in scaling records when spread echoes are present.
- b. Omission of values when $foF2$ is less than or equal to $foF1$, leading to erroneously high values of monthly averages or median values.
- c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report TRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE . Blank spaces at the beginning and end of columns of $h'F1$, $foF1$, $h'E$, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of $h'F1$ and $foF1$ is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

<u>Month</u>	<u>Predicted Sunspot Number</u>										
	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
December	42	11	15	33	53	86	108	114	126	85	
November	35	10	16	38	52	87	112	115	124	83	
October	31	10	17	43	52	90	114	116	119	81	
September	30	8	18	46	54	91	115	117	121	79	
August	105	27	8	18	49	57	96	111	123	122	77
July	95	22	8	20	51	60	101	108	125	116	73
June	89	18	9	21	52	63	103	108	129	112	67
May	77	16	10	22	52	68	102	108	130	109	67
April	68	13	10	24	52	74	101	109	133	107	62
March	60	14	11	27	52	78	103	111	133	105	51
February	53	14	12	29	51	82	103	113	133	90	46
January	48	12	14	30	53	85	105	112	130	88	42

The latest available information follows concerning the corresponding observed Zürich numbers (some of which may be subject to minor change) beginning with the minimum of April 1954.

Observed Sunspot Number

<u>Month</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46				

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:

Brisbane, Australia
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:

Watheroo, Western Australia

University of Graz:

Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:

Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:

Falkland Is.
Ibadan, Nigeria (University College of Ibadan)
Inverness, Scotland
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:

Resolute Bay, Canada

Radio Wave Research Laboratories, National Taiwan University, Taipei, Formosa, China:

Formosa, China

Danish National Committee of URSI:

Godhavn, Greenland

Institute for Ionospheric Research, Lindau Über Northeim, Hannover, Germany:

Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:

De Bilt, Holland

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:

Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanaï, Japan
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of
Scientific and Industrial Research:

Campbell I.
Christchurch, New Zealand
Rarotonga, Cook Is.

Norwegian Defence Research Establishment, Kjeller per Lillestrom,
Norway:

Oslo, Norway
Tromso, Norway

Manila Observatory:

Baguio, P. I.

South African Council for Scientific and Industrial Research:

Capetown, Union of South Africa
Johannesburg, Union of South Africa
Nairobi, Kenya (East African Meteorological Department)

Research Institute of National Defence, Stockholm, Sweden:
Upsala, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:

Adak, Alaska
Ft. Monmouth, New Jersey
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):

Anchorage, Alaska
Fairbanks, Alaska (Geophysical Institute of the
University of Alaska)
Guam I.
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 73 through 84 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

The interpretation of a cell is as follows: U F
32

The U is a weight meaning doubtful. Other weights are I, interpolated, D, greater than, and E, less than. Absence of a letter in the upper left position means full weight is given to the observation.

Symbols such as F above are given in the upper right position.

There should be no difficulty in the placing of the decimal point. For the time being, a final zero will be found in each value of foE. Thus at a later date it will be possible to register more closely scaled values of this characteristic, whenever such are reported.

ERRATUM

1. F138(A), p. 46, fig. 63: A "<" should appear before "2.8" across 17 hour line under Es label.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, O. C. (38.7°N, 77.1°W)						February 1956		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.3					2.95	
01	270	3.8					2.95	
02	270	4.0					2.90	
03	260	4.2					3.00	
04	260	3.7					3.00	
05	250	3.4					3.05	
06	260	3.1					3.00	
07	240	4.6					3.20	
08	230	7.0	---	---	1.7		3.40	
09	230	8.2	220	---	107	2.8	3.4	3.35
10	240	9.2	220	---	105	3.2		3.25
11	250	10.2	215	---	105	3.4		3.20
12	250	10.0	210	---	107	3.5		3.20
13	250	9.8	210	---	109	3.4		3.15
14	250	9.9	220	---	108	3.3		3.20
15	250	9.6	220	---	109	3.1		3.10
16	240	9.3	230	---	111	2.8		3.20
17	230	9.2	---	---	121	2.2		3.20
18	220	8.4		---				3.20
19	220	7.4						3.10
20	230	6.3						3.15
21	235	5.3						3.10
22	250	5.1						3.10
23	260	4.5						3.00

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W)						January 1956		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---					5.3	---	
01	---					5.6	---	
02	---					5.2	---	
03	(3.6)					5.0	(2.95)	
04	---					5.6	---	
05	(3.0)					5.4	(3.00)	
06	(2.9)					4.2	(3.00)	
07	(2.6)					2.8	(3.00)	
08	(3.0)					1.4	(3.00)	
09	(4.4)					1.6	(3.30)	
10	(5.6)						(3.40)	
11	(6.6)						(3.40)	
12	(7.0)						(3.35)	
13	7.4						3.35	
14	(7.0)						3.20	
15	(6.6)						3.30	
16	(6.2)						(3.35)	
17	(5.2)						(3.40)	
18	(3.4)						(3.40)	
19	(2.6)						(3.20)	
20	(2.1)				2.2		(3.10)	
21	(2.6)				2.7		(3.10)	
22	(2.0)				4.5		(3.20)	
23	(1.8)				4.8	---		

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Narsarssuak, Greenland (61.2°N, 45.4°W)						January 1956		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(3.2)					5.0	(2.95)	
01	(3.2)					5.0	(2.90)	
02	(3.2)					4.5	---	
03	(3.9)					4.5	(2.85)	
04	(4.2)					4.5	(3.00)	
05	(3.8)					4.4	(3.10)	
06	3.0					4.2	3.00	
07	2.4					3.5	3.10	
08	3.0					2.3	3.05	
09	4.6						3.30	
10	5.8	---	---	---			3.35	
11	6.6	3.4	133	2.6			3.30	
12	7.6	---	---	2.4			3.25	
13	7.0	3.5	130	2.2			3.25	
14	6.4	---	---	2.1	2.3		3.25	
15	5.3	3.4	---	---	2.1		3.15	
16	(4.0)					4.0	(3.15)	
17	3.5					4.6	2.85	
18	(3.7)					4.5	(3.05)	
19	3.8					4.5	2.95	
20	(3.6)					4.8	(3.05)	
21	(3.7)					5.4	(3.00)	
22	(3.8)					4.5	(2.90)	
23	(3.2)					6.0	(2.90)	

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Tromso, Norway (69.7°N, 19.0°E)						January 1956		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---						4.3
01	---	---						4.0
02	---	---						4.3
03	---	---						4.4
04	---	---			3.2			3.6
05	(280)				3.2			2.75
06	(275)				2.6			3.2
07	(255)				2.4			2.80
08	270				2.6			2.9
09	260				3.9			2.90
10	245				5.1			2.9
11	245				5.9			3.10
12	240				6.6			3.10
13	240				6.3			3.30
14	240				5.7			3.15
15	240				4.2			3.10
16	240				3.3			3.10
17	(250)				2.4			1.9
18	---				(2.7)			4.0
19	---							4.2
20	---							4.8
21	---							5.0
22	---							4.0
23	---							4.0

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 4

Anchorage, Alaska (61.2°N, 149.9°W)						January 1956		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---				(2.2)			(2.70)
01	2.4							2.70
02	2.6							2.60
03	(2.8)							1.9 (2.50)
04	(3.0)							2.0 (2.50)
05	(3.3)							(2.60)
06	(3.2)							(2.70)
07	2.8							2.70
08	(3.0)							2.70
09	4.6							3.00
10	6.2							3.15
11	7.2							3.15
12	7.8							3.05
13	7.9							3.15
14	7.5							3.10
15	6.9							3.10
16	6.6							3.10
17	5.4							3.10
18	4.1							3.10
19	(250)				2.6			1.6
20	---				2.2			1.4
21	---				2.1			1.4
22	---				2.0			1.4
23	---				2.0			1.4 (2.65)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Oslo, Norway (60.0°N, 11.1°E)						January 1956		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	1.9						1.4
01	(340)	1.9						1.3
02	(310)	1.6						1.3
03	300	2.0						1.1
04	300	2.0						1.3
05	295	2.2						1.3
06	270	2.2						1.3
07	(260)	2.3						1.4
08	245	2.8						1.4
09	235	4.8						1.1
10	235	6.2						1.1
11	240	7.2	245					2.3
12	240	7.8	240					3.40
13	230	7.8	240					2.7
14	225	7.6	245					3.35
15	220	6.9	---					1.8
16	225	6.6	---					1.4
17	220	5.4	---					1.4
18	225	4.1	---					1.4
19	(250)	2.6	---					1.6
20	---	2.2	---					1.4
21	---	2.1	---					1.4
22	---	2.0	---					1.4
23	---	2.0	---					1.4 (2.65)

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 7							January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	(2.1)				2.6	(2.7)	
01	340	(2.1)				2.6	2.7	
02	335	(2.1)				2.5	2.8	
03	310	(2.1)				2.5	2.8	
04	310	2.3				3.0	2.8	
05	300	2.2				2.7	2.8	
06	290	2.0				2.5	2.8	
07	300	2.1				2.8	2.9	
08	240	3.8			---	E	3.0	
09	225	5.6			120	1.7	2.5	3.2
10	230	6.8	---	---	110	1.9		3.2
11	230	7.8	235	(3.2)	115	2.0		3.2
12	225	8.2	230	(3.2)	---	2.0		3.3
13	225	8.1	240	(3.2)	(130)	2.0	2.2	3.3
14	230	7.8	---	---	110	1.9	2.2	3.3
15	215	6.9	---	---		1.6		3.3
16	215	6.2	---	---	E	1.8		3.2
17	215	5.0						3.2
18	235	3.4						3.0
19	265	2.5						2.9
20	330	2.2						2.8
21	325	(2.0)						2.8
22	350	(1.8)						2.7
23	350	(1.9)						2.75

Time: 15.0°E.

Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 8							January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00					320	(2.7)		(2.85)
01					340	(2.7)		(2.70)
02					340	(2.7)		(2.70)
03					320	(2.7)		(2.75)
04					320	(2.8)		(2.90)
05					300	(2.8)		(3.00)
06					300	(2.6)		(2.90)
07					310	2.8		(3.00)
08					240	5.4		3.20
09					250	7.2	---	3.20
10					250	8.2	---	3.20
11					250	8.5	---	3.15
12					250	8.4	---	3.25
13					250	8.3	---	3.20
14					250	8.2	---	3.20
15					240	7.7	---	3.30
16					240	6.5		3.25
17					240	5.6		3.15
18					240	4.0		3.30
19					250	2.5		3.30
20					300	(2.3)		3.05
21					320	2.3		2.90
22					340	(2.5)		2.75
23					320	(2.7)		(2.80)

Time: 180.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 9							January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	360	3.3						
01	330	3.4						
02	345	3.3						
03	300	3.5						
04	300	3.2						
05	(290)	3.0						
06	---	2.7						
07	290	3.2						
08	230	6.1						
09	230	7.7						
10	240	8.5						
11	250	8.6						
12	235	8.4						
13	240	8.3						
14	240	>8.4						
15	230	7.8						
16	210	7.2						
17	235	6.8						
18	235	5.2						
19	250	4.0						
20	280	3.4						
21	(300)	3.3						
22	(320)	3.2						
23	(320)	3.3						

Time: 15.0°E.

Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 10							January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00					260	3.0		3.00
01					280	3.1		2.95
02					270	(3.2)		(2.95)
03					250	(3.5)		(3.00)
04					240	3.5		3.10
05					240	3.0		3.10
06					250	2.8		3.10
07					240	3.9		3.20
08					220	6.5	---	1.6
09					220	7.7	220	2.7
10					230	8.7	210	3.0
11					240	9.6	210	3.1
12					240	9.7	210	3.2
13					240	9.4	210	3.1
14					240	9.4	220	3.0
15					230	9.8	225	2.7
16					220	9.0	235	3.30
17					220	8.1		3.25
18					220	7.8		3.20
19					220	6.3		3.30
20					230	4.8		3.25
21					250	3.9		3.10
22					260	3.4		3.15
23					270	3.0		3.00

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11							January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.5				2.3	2.85	
01	280	3.7				2.2	2.90	
02	270	3.8				3.0	3.00	
03	260	3.8				2.3	3.05	
04	260	3.5				2.3	3.05	
05	260	3.2				2.5	2.90	
06	<290	3.0				2.2	2.90	
07	270	4.5				3.1	3.10	
08	240	6.8	---	---	130	4.3	3.35	
09	240	7.9	235	---	125	(2.7)	4.0	3.30
10	250	8.4	230	---	119	(3.0)	5.0	3.25
11	270	9.3	225	(4.8)	119	(3.2)	5.0	3.10
12	260	10.3	230	(4.7)	119	(3.3)	4.9	3.20
13	270	9.8	225	(4.7)	119	(3.3)	4.7	3.05
14	270	9.9	225	---	117	(3.3)	4.3	3.10
15	260	9.7	230	---	119	(3.1)	4.5	3.10
16	250	9.2	230	---	121	(2.8)	4.0	3.10
17	230	8.6	235	---	123	---	3.4	3.25
18	220	6.6				3.7	3.25	
19	230	5.0				2.4	3.20	
20	240	4.1				3.0	3.25	
21	<260	3.2				2.5	3.00	
22	280	3.0				2.6	2.85	
23	<300	3.1				2.5	2.85	

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12							January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00					270	4.5		2.85
01					270	4.2		2.95
02					260	4.4		3.05
03					240	3.9		3.15
04					240	3.0		3.05
05					290	2.6		2.85
06					300	2.5		2.85
07					270	3.5		3.00
08					240	7.5	---	2.2
09					240	9.0	230	2.8
10					250	10.1	220	4.0
11					250	10.0	220	3.2
12					280	11.5	210	4.9
13					280	13.2	220	3.6
14					260	12.9	210	4.7
15					250	12.2	220	4.6
16					250	11.0	230	4.0
17					240	10.6	240	3.4
18					210	9.7		2.7
19					220	7.9		3.15
20					220	7.6		2.4
21					220	7.7		2.0
22					220	5.7		3.20
23					240	4.8		1.8

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 12.5 seconds.

Table 13

Formosa	China (25.0°N, 121.5°E)						January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.8			<1.7		2.80	
01	260	4.6			<1.6		2.90	
02	240	4.1			<1.7		3.00	
03	240	3.7			1.9		3.15	
04	280	2.9			<1.4		2.90	
05	310	2.7			<1.4		2.60	
06	320	2.8			<1.5		2.70	
07	260	6.4			160	<1.7	3.20	
08	250	8.8	---	---	120	2.6	3.35	
09	250	9.8	240	(4.6)	120	3.0	3.2	3.30
10	250	11.2	240	120	3.3	4.0	3.20	
11	280	12.0	220	4.7	120	3.4	4.2	3.10
12	280	13.5	220	4.9	120	3.5	4.2	3.00
13	280	14.0	230	(4.7)	120	3.5	4.2	3.00
14	280	14.2	230	(4.7)	120	3.5	4.0	3.10
15	280	13.8	240	4.6	120	3.2	4.0	3.10
16	250	13.5	240	(3.8)	---	---	3.3	3.10
17	240	12.8			---	---	2.4	3.30
18	220	10.0			---	---	2.5	3.30
19	220	9.6					2.6	3.20
20	230	10.1					2.4	3.20
21	220	8.3					2.1	3.30
22	240	6.2					2.0	3.10
23	260	5.2					<1.7	2.90

Time: 120.0°E.

Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 15

Puerto Rico, W. I. (18.5°N, 67.2°W)							January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.3			<1.8		2.85	
01	260	4.5			<1.8		3.05	
02	240	4.5			<1.8		3.20	
03	250	4.3			<1.9		3.10	
04	260	3.9			<1.8		3.00	
05	265	3.8			<1.7		2.90	
06	260	3.7			<1.8		3.00	
07	240	4.8			<1.8	<1.8	3.25	
08	230	7.7	235	---	109	2.3	3.45	
09	250	9.3	230	---	109	3.0	3.45	
10	240	9.9	215	---	107	3.3	3.45	
11	250	9.2	210	4.8	109	3.4	3.35	
12	265	8.9	210	4.8	109	3.5	4.1	3.10
13	290	9.4	225	5.0	(107)	3.5	3.9	3.05
14	280	9.8	225	5.0	109	3.5	4.5	3.05
15	270	9.3	220	(4.8)	109	3.3	4.0	3.05
16	260	9.3	225	---	109	3.0	3.7	3.00
17	250	9.7	240	---	115	2.6	3.4	3.10
18	230	9.3			---	---	<3.0	3.30
19	210	7.3					2.7	3.30
20	225	5.5					<2.3	3.20
21	250	4.8					<2.2	3.10
22	250	4.4					<1.9	3.00
23	280	4.2					<1.9	2.85

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Panama Canal Zone (9.4°N, 79.9°W)							January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	(5.1)					(3.10)	
01	240	(4.4)					(3.10)	
02	240	(3.5)					2.2	(3.10)
03	260	(3.0)					3.0	(3.10)
04	(260)	2.5					3.5	3.05
05	280	(2.8)					3.1	2.90
06	290	3.1					2.2	2.85
07	250	6.4	---	---	---	---	3.2	3.20
08	260	9.2	240	---	115	(2.6)	3.1	3.20
09	270	11.0	230	---	(117)	(3.1)	3.5	3.20
10	270	11.5	210	(5.1)	(115)	(3.5)	4.2	3.20
11	280	10.9	205	5.2	(110)	(3.6)	4.8	3.05
12	300	10.5	200	5.3	117	(3.7)	4.6	2.90
13	340	11.0	205	5.5	117	(3.7)	5.0	2.75
14	330	11.9	230	5.4	(115)	3.6	4.9	2.85
15	300	12.2	240	5.2	(115)	3.4	5.1	2.95
16	280	11.5	230	---	115	3.1	5.1	3.00
17	250	10.6	240	---	120	2.7	4.1	3.05
18	240	9.5			---	---	4.7	3.10
19	230	8.2					4.3	3.20
20	230	6.2					3.6	3.20
21	240	5.0					2.3	3.00
22	245	(4.9)					2.0	3.05
23	250	(5.4)						(3.10)

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Maui, Hawaii (20.8°N, 156.5°W)							January 1956	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275		3.7					2.90
01	270		3.5					2.95
02	250		3.5					3.25
03	240		3.2					1.5
04	240		2.3					3.20
05	280		2.2					2.0
06	290		2.0					2.90
07	280		4.3					1.8
08	250		7.6	250	---	125	2.3	3.25
09	270		9.9	240	---	115	3.0	3.15
10	270		11.4	225	---	111	3.3	3.25
11	270		11.3	215	4.8	111	3.5	3.10
12	300		11.5	210	5.0	111	3.6	2.90
13	310		13.0	220	5.0	111	3.6	6.0
14	290		13.6	230	---	111	3.4	5.6
15	270		13.0	240	---	111	3.3	5.0
16	250		11.5	230	---	115	3.0	5.10
17	240		10.8	245	---	119	2.4	4.9
18	230		9.0					5.0
19	220		5.8					4.5
20	240		5.4					3.25
21	240		5.6					4.0
22	230		4.7					3.05
23	250		4.0					3.20

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Anchorage, Alaska (61.2°N, 149.9°W)							December 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310		1.8					2.8
01	(300)		1.8					2.7
02	<340		2.4					2.6
03	360		3.2					2.6
04	(330)		2.8					2.6
05	330		2.8					2.6
06	320		2.8					2.6
07	300		2.4					2.75
08	270		3.1					2.8
09	250		4.5					3.1
10	240		6.6					3.2
11	240		7.6					3.2
12	240		8.2					3.2
13	240		8.5					(1.9)
14	230		8.5					3.2
15	230		7.0					3.2
16	230		5.6					3.2
17	230		4.7					3.15
18	240		3.4					3.15
19	260		2.3					3.1
20	(270)		1.8					3.1
21	(300)		(1.8)					3.0
22	(290)		1.9					2.95
23	(290)		1.8					2.8

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19

Narsarssuak, Greenland (61.2°N, 45.4°W)						December 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	f0E	fEs (M3000)F2
00	300	(3.8)				4.5	(2.95)
01	(300)	3.9				4.6	3.0
02	(350)	3.6				4.6	2.9
03	310	4.0				4.5	2.9
04	290	3.6				4.0	3.0
05	280	3.7				3.8	3.1
06	270	3.1				4.2	3.1
07	290	2.7				3.2	3.1
08	270	3.0				<2.7	3.1
09	240	4.9				<2.1	3.3
10	240	6.6		---	---	<2.2	3.3
11	240	7.6	250	---	130	2.0	2.2
12	230	8.2	---	---	130	2.1	<2.2
13	240	7.4	---	---	130	2.0	<2.2
14	230	6.9				2.2	3.3
15	240	6.7				<2.3	3.2
16	250	5.3				<2.6	3.1
17	270	4.1				3.0	3.1
18	300	3.5				3.8	3.05
19	320	3.2				3.8	3.0
20	320	3.2				4.4	3.0
21	290	3.4				4.2	3.05
22	300	3.7				4.5	(3.0)
23	(300)	(3.7)				5.4	(3.0)

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Schwarzenburg, Switzerland (46.8°N, 7.3°E)						December 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	fOE	fEs (M3000)F2
00	300	3.2					3.1
01	300	3.3					3.1
02	300	3.5					3.1
03	280	3.5					3.2
04	250	3.4					3.3
05	240	3.2					3.5
06	220	3.0					3.6
07	250	2.8					3.5
08	200	4.8			---	---	3.65
09	200	6.9			100	2.1	4.0
10	200	8.0			100	2.5	3.8
11	200	9.2			100	2.7	3.8
12	200	9.0			100	2.8	3.8
13	200	8.5			100	2.8	3.8
14	200	9.0			100	2.7	3.7
15	200	8.6			100	2.5	3.8
16	200	7.4			100	2.0	3.8
17	200	6.4			---	---	3.8
18	200	4.8					3.6
19	200	4.2					3.6
20	200	3.6					3.6
21	245	3.0					3.5
22	300	2.8					3.15
23	300	3.1					3.1

Time: 15.0°F

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 23

Watheroo, W. Australia (30.3°S, 115.9°E)						December 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	270	6.8				3.0	2.9
01	260	6.8				2.8	3.0
02	260	6.2				2.9	2.9
03	260	5.7				2.9	2.8
04	255	5.2				3.0	2.9
05	270	5.0			1.3	3.0	2.9
06	250	5.8	255	3.5	2.1	3.0	3.0
07	320	6.4	230	4.5	2.8	3.0	3.0
08	340	7.0	220	4.9	3.2	3.0	2.9
09	330	7.6	220	5.2	3.5	2.9	2.85
10	350	8.2	205	5.3	3.7	3.0	2.8
11	365	8.5	200	5.3	3.8	3.0	2.8
12	350	8.7	210	5.4	3.8	2.9	2.8
13	350	9.2	220	5.3	3.9	2.9	2.8
14	330	9.0	220	5.3	3.8	2.9	2.8
15	330	8.8	225	5.2	3.7	2.9	2.8
16	320	9.1	225	5.0	3.4	3.0	2.9
17	300	8.5	230	4.5	3.0	3.0	2.9
18	275	8.2	250	4.0	2.5	3.0	3.0
19	260	7.5			1.7	3.0	3.0
20	250	7.3				3.0	3.0
21	250	7.0				2.9	2.9
22	270	6.9				2.9	2.8
23	270	6.8				2.9	2.8

Time: 130.08 E

Time: 120.0° E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds

Table 20

Adak, Alaska (51.9°N, 176.6°W)		Table 2		December 1955			
Time	h°F2	f0F2	h°F1	f0F1	h°E	f0E	fEs (M3000)F2
00	<310	(2.6)				<1.4	2.8
01	320	(2.7)				<1.1	2.8
02	320	2.7				<1.4	2.8
03	320	2.7				<1.1	2.8
04	310	2.7				<1.4	2.8
05	300	2.8				<1.2	2.9
06	260	2.7				<1.2	3.1
07	250	3.1			---	---	3.0
08	230	5.7			---	---	3.3
09	230	7.6	---	---	120	(2.3)	3.3
10	230	8.8	---	---	120	2.5	3.3
11	240	9.1	240		130	2.6	3.3
12	230	8.9	---	---	130	2.8	3.4
13	240	8.8	---	---	120	(2.7)	3.3
14	230	8.8	---	---	130	(2.5)	3.3
15	220	7.3	---	---	---	---	3.5
16	220	5.8					3.3
17	220	4.2				<1.8	3.4
18	240	2.7				<1.4	3.3
19	250	2.4				<2.0	3.3
20	260	2.4				<1.4	3.25
21	(310)	.2.2				<2.0	(2.8)
22	320	2.4				<1.5	2.8
23	300	(2.5)				<1.3	2.9

Time: 180.0°W

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 22

Baguio, P. I. (16.4°N, 120.6°E)							December 1955	
Time	h°F2	f°F2	h°F1	f°F1	h°E	f°E	f°Es	(M3000)F2
00	220	7.7					<1.3	3.2
01	220	7.0					1.7	3.25
02	220	6.4						3.4
03	210	4.8						3.3
04	220	3.4						3.1
05	250	3.0						3.0
06	290	3.7					<1.3	2.8
07	250	7.3			120	2.1		3.1
08	250	10.2	230	---	110	2.8		3.1
09	290	12.0	220	---	110	3.1	5.0	3.0
10	290	12.2	210	---	110	3.4	6.8	2.9
11	300	12.2	200	---	110	3.5	6.8	2.7
12	300	12.2	200	---	110	3.5	6.0	2.6
13	(320)	12.3	200	---	110	3.5	6.1	2.6
14	(300)	12.2	200	---	110	3.3	6.0	2.6
15	(290)	12.0	210	---	110	3.0	4.1	2.7
16	240	12.3	220	---	110	2.7	3.6	2.7
17	250	12.0			120	1.9	3.2	2.9
18	250	11.6					2.5	2.9
19	250	10.9					2.1	2.9
20	240	10.6					2.5	2.9
21	230	10.5					3.3	3.0
22	220	9.9					1.7	3.2
23	220	8.8					<1.5	3.2

Time: 120 °F

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 34

De Bilt, Holland (52.1°N, 5.2°E)		November 1955						
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000) F2
00	<300	3.0						2.5
01	<300	3.1						2.6
02	<300	2.9						2.5
03	<300	2.7						2.6
04	<250	2.4						2.8
05	<250	2.4						2.9
06	250	2.5						2.8
07	225	4.3			---		E	3.3
08	215	6.4	---	---	120	1.9		3.5
09	215	>7.2	225	3.2	110	2.3	2.2	3.4
10	220	7.9	220	3.4	105	2.5	2.2	3.4
11	225	>8.0	210	3.4	105	2.7	2.4	(3.25)
12	225	>8.3	215	3.6	105	2.8		(3.3)
13	220	(8.2)	225	3.4	115	2.7		(3.2)
14	225	(8.0)	---	---	115	2.4		(3.4)
15	220	(7.4)			140	1.9		(3.3)
16	205	6.8						3.3
17	215	6.0						3.2
18	220	5.1						3.2
19	225	3.8						3.2
20	<250	3.0						2.9
21	<275	2.8						2.6
22	(275)	2.8						2.5
23	---	3.0						2.5

Time: 0.00

Sweep: 0.8 Mc. to 30.0 Mc. in 20 seconds

Table 25

Wakkanai, Japan (45.4°N, 141.7°E)							November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.6						
01	310	3.6			2.3			
02	300	3.7			2.3			
03	310	3.6			2.3			
04	290	3.7			2.2			
05	260	3.7						
06	260	3.8						
07	230	6.6						
08	230	7.8						
09	230	8.5						
10	250	9.3		3.9				
11	240	9.9						
12	250	9.6						
13	240	8.8						
14	240	8.5						
15	230	8.3						
16	220	7.2						
17	230	5.3		2.0				
18	250	4.2		2.3				
19	260	3.6						
20	290	3.4						
21	300	3.4						
22	330	3.4						
23	330	3.5						

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 27

Tokyo, Japan (35.7°N, 139.5°E)							November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.5					2.8	
01	300	3.5					2.8	
02	280	3.6			2.2		2.8	
03	260	3.7			2.6		2.9	
04	240	3.7			2.3		3.1	
05	260	3.2			1.9		2.9	
06	240	4.0					3.1	
07	230	7.0	---	---	130	1.9	2.7	3.5
08	230	8.5	230	---	110	2.6	3.3	3.4
09	240	9.5	230	4.3	110	2.8	3.6	3.4
10	230	10.0	230	4.6	110	3.1	4.0	3.4
11	240	9.9	220	4.6	110	3.2	4.2	3.3
12	240	9.7	220	4.5	110	3.2	4.0	3.2
13	250	10.4	220	4.4	110	3.2	4.0	3.2
14	240	10.0	230	4.1	120	3.0	3.9	3.3
15	230	9.4	230	3.7	120	2.6	3.5	3.4
16	220	7.6	---	---	130	2.0	3.0	3.4
17	210	6.2				2.1	3.4	
18	230	4.4				1.7	3.2	
19	240	4.2				1.8	3.1	
20	240	3.9					3.1	
21	250	3.4					3.0	
22	280	3.4					2.9	
23	310	3.4					2.8	

Time: 135.0°E.

Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 29

Baguio, P. I. (16.4°N, 120.6°E)							November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	8.2			<1.6		3.3	
01	220	7.5			1.2		3.2	
02	230	7.2			<1.3		3.3	
03	210	5.8			1.6		3.35	
04	220	4.2			<1.2		3.1	
05	240	3.3			<1.2		3.1	
06	270	4.6			1.8		3.0	
07	240	8.1		230	110	2.3	3.2	3.25
08	270	10.2	230	---	110	2.9	4.0	3.2
09	280	11.8	220	---	110	3.2	5.0	3.1
10	280	12.2	210	---	110	3.4	4.8	3.0
11	300	12.8	200	---	110	3.5	5.2	2.7
12	300	12.4	200	---	110	3.5	6.1	2.6
13	300	11.7	200	---	110	3.4	4.6	2.6
14	300	12.0	200	---	110	3.2	5.4	2.6
15	240	12.0	210	---	110	3.0	4.5	2.7
16	240	12.5	---	---	110	2.5	4.5	2.7
17	250	12.5				4.0	2.9	
18	260	11.6				3.6	2.9	
19	250	11.5			<1.6		2.9	
20	240	11.2				3.3	2.9	
21	240	11.4				2.6	3.0	
22	220	10.8				2.0	3.25	
23	220	9.4				2.0	3.3	

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 26

Akita, Japan (39.7°N, 140.1°E)							November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	3.6						2.5
01	320	3.6						2.5
02	310	3.6						2.5
03	300	3.6						2.5
04	290	3.7						2.6
05	260	3.5						2.5
06	260	3.9						2.5
07	240	6.8						
08	250	8.2						
09	250	8.7						
10	260	8.7						
11	260	9.2						
12	260	9.0						
13	270	9.0						
14	260	8.8						
15	250	8.3						
16	240	7.4						
17	230	5.6						
18	260	4.5						
19	260	3.8						
20	270	3.6						
21	300	3.5						
22	320	3.5						
23	340	3.5						

Time: 135.0°E.

Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 28

Yamagawa, Japan (31.2°N, 130.6°E)							November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.6						2.3
01	300	3.6						2.3
02	290	3.5						2.4
03	280	3.7						
04	260	3.8						
05	260	3.0						
06	280	2.9						
07	240	5.8						
08	240	8.0						
09	250	9.3						
10	240	10.1						
11	250	10.2						
12	250	10.1						
13	260	10.7						
14	260	11.3						
15	240	10.5						
16	240	10.0						
17	220	8.1						
18	210	6.4						
19	240	5.4						
20	240	5.7						
21	240	5.0						
22	250	4.0						
23	300	3.6						

Time: 0.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 31

Elizabethtown, Belgian Congo (11.6°S, 27.5°E)							November 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	7.8					2.25	
01	235	6.9					2.3	
02	230	5.3					2.4	
03	230	4.3					2.4	
04	240	5.7	---	---	135	1.7	2.5	
05	245	7.3	230	---	110	2.6	2.5	
06	280	8.0	225	---	105	3.1	2.3	
07	300	9.0	220	---	110	3.4	2.1	
08	320	10.0	215	5.0	110	3.7	2.1	
09	340	10.7	210	5.0	105	3.8	2.0	
10	340	11.3	---	5.1	110	3.8	2.0	
11	330	>11.6	---	5.0	110	3.8	2.0	
12	330	>11.6	---	4.9	110	3.7	2.05	
13	330	11.7	220	---	110	3.5	3.8	
14	310	>11.7	225	---	110	3.1	3.4	
15	285	11.9	240	---	110	2.6	3.2	
16	255	11.7					2.8	2.2
17	250	11.2					2.6	2.1
18	255	11.3					2.2	2.1
19	255	11.2					1.8	2.2
20	245	11.0						2.2
21	250	10.6						2.2
22	240	9.7						2.3
23	230	8.6						2.2

Time: 0.0°.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 33

Godhavn, Greenland (69.2°N, 53.5°W)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	(3.0)				<1.6	---	
01	270	(2.9)				<1.6	(2.9)	
02	290	(2.8)				2.8	(2.8)	
03	280	(2.6)				<2.1	(2.8)	
04	280	(2.7)				<2.0	---	
05	290	(2.7)				3.3	---	
06	290	(2.7)				3.0	(2.8)	
07	270	(2.7)	---	---		<2.0	---	
08	270	(3.8)	260	---	120	2.8	---	
09	260	(5.4)	250	---	120	1.8	<2.4	---
10	260	(5.8)	240	---	120	2.0	<2.5	(3.3)
11	(260)	(6.2)	240	(3.4)	120	2.2	<2.5	(3.3)
12	260	(6.0)	230	3.7	120	2.2		(3.2)
13	250	(5.5)	230	(3.6)	120	2.1	2.5	(3.2)
14	250	(5.2)	240	3.6	120	2.0	<2.5	(3.2)
15	250	(5.2)	240	---	120	2.0	3.3	---
16	240	(5.0)	250	---	120	2.0	2.5	(3.2)
17	240	(4.6)	240	---	120	4.8	(3.0)	
18	250	(4.8)				5.4	(3.0)	
19	240	(4.6)				5.6	---	
20	240	(4.2)				4.4	---	
21	240	(3.7)				4.4	---	
22	240	(3.4)				3.5	(2.95)	
23	260	(3.0)				3.2	(3.0)	

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 35

Akita, Japan (39.7°N, 140.1°E)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	4.0					3.0	
01	310	4.0					2.7	
02	310	4.0					2.8	
03	300	4.1					2.8	
04	270	4.2					3.0	
05	280	4.0					2.6	
06	250	5.6					2.7	
07	240	7.2					3.0	
08	250	8.1						
09	260	8.4					4.2	
10	270	8.5					4.2	
11	270	8.8					4.0	
12	280	9.0					3.5	
13	280	8.7					3.5	
14	280	8.5					3.5	
15	260	8.3					3.4	
16	250	8.1					3.5	
17	250	6.7					3.5	
18	250	5.8					3.5	
19	260	4.8					3.5	
20	280	4.5					3.1	
21	300	4.0					3.4	
22	300	4.1					3.0	
23	310	4.0					2.6	

Time: 135.0°E.

Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 32

Resolute Bay, Canada (74.7°N, 94.9°W)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.4						<1.7
01	260	3.4						<1.1
02	260	3.2						3.0
03	240	3.6						3.1
04	270	3.3						3.05
05	270	3.0						3.2
06	250	3.5						3.1
07	250	4.0						3.1
08	240	4.3						3.1
09	240	5.0						3.1
10	240	5.0						3.1
11	250	5.2						3.1
12	250	5.2						3.1
13	260	5.0						3.2
14	250	5.2						3.2
15	240	5.1						3.1
16	240	5.1						3.1
17	240	5.1						3.2
18	240	5.0						3.1
19	240	4.6						3.1
20	240	4.2						3.1
21	250	4.1						3.1
22	250	4.1						3.0
23	250	3.6						3.1

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 35

Tokyo, Japan (35.7°N, 139.5°E)							October 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.0						2.8
01	290	4.0						2.8
02	280	4.0						2.9
03	260	4.0						2.2
04	240	4.0						3.1
05	260	3.8						3.0
06	230	5.9	240	---	120	1.6	2.2	3.4
07	220	7.5	220	3.3	120	2.2	3.3	3.5
08	230	8.6	220	4.0	110	2.7	3.5	3.5
09	240	8.5	220	4.5	110	3.0	3.8	3.4
10	250	9.0	200	4.5	110	3.1	4.1	3.25
11	250	9.7	210	4.6	110	3.2	4.0	3.3
12	260	10.0	220	4.8	110	3.2	3.8	3.2
13	260	9.8	230	4.8	110	3.2	3.9	3.2
14	260	9.5	230	4.6	110	3.1	3.6	3.2
15	240	9.4	240	4.5	110	2.8	3.8	3.3
16	230	9.1	230	3.4	120	2.3	3.8	3.4
17	230	7.9	---	---	---	---	3.5	3.4
18	230	6.0	---	---	---	---	3.5	3.3
19	250	4.8	---	---	---	---	3.2	3.2
20	260	4.4	---	---	---	---	3.4	3.0
21	270	4.2	---	---	---	---	2.9	3.0
22	290	4.0	---	---	---	---	3.2	2.9
23	300	3.9	---	---	---	---	3.0	2.9

Time: 135.0°E.

Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 37

Yamagata, Japan (31.2°N, 130.6°E)	October 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.2			2.3			
01	300	4.1			2.3			
02	290	4.1			2.3			
03	280	4.1			2.3			
04	250	4.0			2.3			
05	260	3.6			2.3			
06	260	3.9			2.3			
07	230	7.0						
08	230	7.8			3.6			
09	240	8.6			4.7			
10	250	9.5			5.9			
11	250	10.0			4.9			
12	270	10.9			3.8			
13	280	11.2			5.0			
14	280	11.6			5.7			
15	260	11.2			4.2			
16	240	10.8			4.1			
17	240	9.6			3.8			
18	230	8.3			3.3			
19	220	6.2			3.2			
20	250	5.5			3.1			
21	260	5.0			3.2			
22	270	4.6			2.4			
23	290	4.3			3.0			

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 39

Rarotonga I. (21.3°S, 159.8°W)	October 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(7.8)						(3.1)
01	250	(7.3)						3.25
02	240	6.9						3.1
03	260	5.4						3.0
04	280	5.0						2.9
05	280	5.1						
06	250	6.7	130	1.7	1.8			3.35
07	250	8.2	240	4.0	115	2.5	2.9	3.5
08	270	(8.6)	230	4.5	110	3.0	3.7	(3.3)
09	270	9.2	220	5.0	105	3.4		3.3
10	290	9.9	220	5.0	105	3.5	3.7	3.2
11	300	9.8	210	5.0	105	3.7	3.9	3.2
12	290	11.1	210	5.0	105	3.7	3.8	3.1
13	300	10.8	200	5.0	105	3.7	3.8	3.1
14	300	10.3	220	5.0	105	3.5	3.8	3.1
15	300	(9.8)	230	5.0	105	3.4	3.9	3.0
16	300	10.0	240	4.8	105	3.0	3.7	(3.05)
17	280	(9.4)	250	4.2	105	2.5	3.9	(3.1)
18	270	(9.0)	---	---	---	3.6	(3.3)	
19	250	(9.0)	---	---	2.9	(3.0)		
20	260	(9.0)	---	---	3.0	(3.2)		
21	270	(8.3)	---	---	2.0	(3.1)		
22	280	(8.5)	---	---	2.0	(3.1)		
23	280	(7.6)	---	---	1.8	(3.1)		

Time: 157.5°W.

Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 41

Capetown, Union of S. Africa (34.2°S, 18.3°E)	October 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<270	3.6						2.9
01	270	3.7						2.9
02	260	3.7						2.9
03	250	3.6						2.9
04	260	3.6						2.8
05	<260	3.6						2.9
06	250	4.5						3.0
07	240	6.2	230	---	130	2.1		3.3
08	260	7.3	230	4.0	120	2.7		3.2
09	280	8.0	220	4.5	110	3.0		3.05
10	300	8.7	220	4.7	110	3.3		2.9
11	300	9.4	210	4.9	110	3.5		2.9
12	300	10.0	210	4.9	110	3.6		2.8
13	310	10.3	210	4.9	110	3.6		2.8
14	300	10.5	220	4.9	110	3.5		2.9
15	300	10.4	210	4.8	110	3.4		2.9
16	280	10.2	230	4.4	110	3.2		2.9
17	270	9.8	230	4.0	120	2.8		3.0
18	250	9.6	240	3.2	120	2.2	2.7	3.1
19	230	8.8	---	---	---	3.2		
20	220	7.3	---	---	---	3.2		
21	230	5.6	---	---	---	3.1		
22	250	4.5	---	---	---	3.0		
23	<260	4.0	---	---	---	3.0		

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 38

Nairobi, Kenya (1.3°S, 36.8°E)	October 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	190	>9.0						(3.4)
01	<230	>6.6						2.9
02	260	6.4						2.8
03	260	6.4						3.0
04	250	6.6						3.1
05	230	5.5						3.3
06	230	5.1						3.4
07	250	7.5	240	---	---	---	---	3.4
08	260	8.6	230	4.5	110	2.9	3.4	3.3
09	270	9.0	220	4.6	110	3.2		3.2
10	300	9.6	---	4.8	110	---	(4.9)	2.9
11	310	10.1	---	5.0	100	3.6	(4.9)	2.9
12	300	10.8	---	5.0	100	---		2.8
13	(320)	11.0	---	(5.0)	100	---		2.7
14	340	11.8	---	5.1	110	---	(4.2)	2.7
15	330	12.0	200	4.8	100	3.3	3.7	2.7
16	310	12.0	210	4.6	110	3.0	3.7	2.7
17	(300)	11.9	240	---	110	2.6	3.1	2.7
18	(280)	>11.8	260	---	---	---	3.1	---
19	310	>11.6	---	---	---	2.6	---	
20	310	>11.8	---	---	---	---	---	
21	280	---	---	---	---	---	---	
22	230	>13.8	---	---	---	---	---	
23	200	>13.4	---	---	---	---	(3.7)	

Time: 45.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 40

Johannesburg, Union of S. Africa (26.2°S, 28.1°E)	October 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<260	4.2						2.9
01	250	4.3						3.0
02	230	3.9						2.9
03	---	3.5						3.0
04	---	3.4						3.0
05	---	3.4						3.0
06	230	5.5						3.3
07	250	7.0	230	3.8	110	2.5		3.3
08	270	8.1	220	4.4	110	2.9		3.2
09	280	8.7	210	4.8	110	3.2		3.1
10	290	8.9	200	4.9	110	3.4		2.9
11	300	9.5	200	5.0	110	3.6		2.9
12	300	10.0	200	5.0	110	3.6		2.9
13	300	10.1	210	5.0	110	3.6		2.9
14	300	10.1	200	4.9	110	3.5	3.9	2.9
15	300	10.2	210	4.7	110	3.3	3.9	2.9
16	300	10.2	220	4.4	110	3.0	3.8	3.0
17	260	10.0	220	3.6	110	2.4	3.2	3.0
18	230	9.7	---	---	---	---	2.3	3.1
19	220	8.5	---	---	---	---	---	3.1
20	230	7.1	---	---	---	---	---	3.1
21	230	5.5	---	---	---	---	---	3.0
22	<250	5.0	---	---	---	---	---	3.0
23	<250	4.6	---	---	---	---	---	3.0

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 42

Christchurch, New Zealand (43.6°S, 172.8°E)	October 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	4.9						2.7
01	280	4.7						2.8
02	280	4.3						2.8
03	270	3.9						2.9
04	280	3.5						2.8
05	270	3.4						2.9
06	280	4.7	260	---	1.8			3.1
07	320	5.4	240	3.8	2.4			3.1
08	300	6.0	240	4.3	2.7			3.1
09	310	6.5	230	4.6	3.0			3.0
10	310	6.8	230	4.7	3.2			3.0
11	320	6.9	220	4.8	3.3			3.0
12	320	7.4	230	4.8	3.3			3.0
13	310	7.2	230	4.8	3.3			3.0
14	310	7.1	230	4.7	3.2		</	

Table 43

Point Barrow, Alaska (71.3°N, 156.8°W)								September 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2		
00	---	---					6.8			
01	(270)	---					5.1			
02	(280)	---					6.4	---		
03	300	---					5.2	---		
04	(280)	(3.8)					3.9	---		
05	(290)	---					3.4	---		
06	---	---	---	---			4.0	---		
07	---	(3.5)	---	---			3.2	---		
08	(360)	(4.3)	220	(3.5)	---	---	4.0	(3.0)		
09	380	4.1	220	3.6	---	2.2	4.4	2.9		
10	(400)	(4.2)	(230)	(3.5)	110	2.5	4.0	(3.2)		
11	400	(4.3)	(230)	(3.6)	110	(2.5)	3.1	3.0		
12	310	4.6	210	3.7	(100)	(2.5)	3.0	3.2		
13	(340)	4.6	220	(3.7)	100	(2.6)	2.7	3.05		
14	(340)	4.8	230	(3.8)	110	2.5		3.0		
15	310	4.8	230	(3.7)	110	2.4	2.0	3.1		
16	300	4.8	240	(3.7)	110	(2.3)	<1.8	3.05		
17	270	(4.8)	240	---	120	(2.1)	2.3	(3.15)		
18	270	(4.5)	---	---	---	---	2.8	(3.2)		
19	(260)	(3.5)	---	---	---	---	3.4	(3.1)		
20	(280)	---					4.3	---		
21	(310)	---					5.4	---		
22	---	---					6.0	---		
23	(260)	---					6.0	---		

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 45*

Inverness, Scotland (57.4°N, 4.2°W)								September 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2		
00	300	(2.7)						(2.7)		
01	305	(2.5)						(2.7)		
02	315	(2.3)						(2.7)		
03	320	(2.2)					2.3	(2.6)		
04	310	(2.0)						(2.7)		
05	280	(2.2)					1.6	(2.9)		
06	255	3.2			125	1.6	2.2	3.0		
07	275	4.0	220	3.4	120	1.9		3.1		
08	320	4.5	220	3.7	115	2.3	2.8	(3.2)		
09	335	4.8	210	3.9	110	2.6		(3.2)		
10	330	5.3	210	4.1	110	2.8		3.3		
11	330	5.5	210	4.2	110	2.9		3.1		
12	325	5.6	210	4.2	110	2.9		3.1		
13	315	5.6	215	4.3	110	2.9		3.1		
14	315	5.6	210	4.2	105	2.9		3.1		
15	295	5.7	220	4.0	110	2.7		3.1		
16	295	5.7	230	3.8	110	2.5		3.1		
17	270	5.8	235	(3.5)	120	2.2	2.4	3.1		
18	255	5.8			120	1.9		3.1		
19	250	5.5						3.1		
20	245	5.1						3.0		
21	260	4.5						2.9		
22	270	3.9						3.0		
23	290	3.1						(2.8)		

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 47*

Slough, England (51.5°N, 0.6°W)								September 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2		
00	285	3.6					2.5	2.75		
01	290	3.6					2.6	2.75		
02	290	3.3					2.6	2.7		
03	290	3.2					2.6	2.75		
04	285	3.1					2.6	2.75		
05	275	2.8					3.0	2.85		
06	275	3.8	245	3.0	140	1.6	3.2	3.1		
07	300	4.6	230	3.5	120	2.1	3.3	3.15		
08	310	5.1	225	3.9	115	2.5	3.8	3.1		
09	320	5.4	220	4.2	115	2.8	4.2	3.05		
10	310	5.9	220	4.3	115	2.9	4.0	3.15		
11	310	6.0	210	4.4	115	3.1	4.4	3.1		
12	310	6.1	215	4.5	115	3.1	4.6	3.05		
13	305	6.1	215	4.4	115	3.1	3.8	3.1		
14	295	6.3	225	4.3	115	3.0	3.8	3.1		
15	290	6.2	225	4.2	115	2.8	2.9	3.1		
16	280	6.2	235	3.9	115	2.6	3.4	3.1		
17	270	6.3	240	3.4	120	2.1	3.4	3.1		
18	250	6.5			(125)	(1.8)	3.0	3.15		
19	250	6.0					2.8	3.05		
20	245	5.6					2.7	3.05		
21	255	4.9					2.6	3.0		
22	265	4.4					2.6	2.85		
23	280	3.7					2.6	2.75		

Time: 0.0°.

Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 44

Godhavn, Greenland (69.2°N, 53.5°W)								September 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2		
00	260	(3.1)							3.0	(2.9)
01	280	(3.0)							<1.4	(2.9)
02	290	(2.9)							2.6	—
03	(280)	(2.5)							2.9	(2.85)
04	(280)	(2.6)							3.2	(2.7)
05	280	(2.8)					---	---	<2.2	(3.0)
06	250	(3.4)	250	3.0			---	---	<2.7	(3.15)
07	(290)	(3.7)	250	3.0	---	---	---	---	<2.4	(2.85)
08	(340)	(4.2)	240	3.3	120	(2.2)	2.8	—		
09	(350)	(4.4)	240	3.5	(120)	(2.6)	2.4	3.3		
10	(330)	(4.7)	230	(3.6)	(120)	(2.6)	<3.1	3.1		
11	340	5.1			220	3.8	(110)	2.6	3.0	
12	(330)	(5.0)	220	3.8	110	2.6		3.0		
13	(350)	(4.8)	220	3.9	110	2.5	4.2	3.0		
14	(320)	(4.9)	220	3.9	110	2.4	4.4	3.2		
15	300	(4.8)	230	(3.8)	110	2.4	3.5	3.0		
16	(280)	(4.8)	230	(3.6)	(120)	(2.3)	5.6	3.2		
17	250	(4.6)	230	(3.5)	120	2.1	4.8	3.3		
18	250	(4.3)	240	---				5.4		(3.15)
19	250	4.0						4.6		(3.1)
20	250	4.0						4.6		
21	240	3.7						3.7		(3.0)
22	250	3.5						2.0		(3.0)
23	250	(3.4)						3.4		(2.9)

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 46*

Lindau/Harz, Germany (51.6°N, 10.1°E)								September 1955		
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2		
00	265	3.8							2.4	3.0
01	275	3.6							2.3	3.0
02	275	3.5							2.2	2.9
03	275	3.4							1.9	2.9
04	275	3.3							2.0	2.9
05	260	3.0							2.1	3.1
06	250	3.6	240	---	---	---	E	—	2.2	3.2
07	260	4.5	230	---	110	2.0	3.1	—	3.4	
08	270	5.1	215	3.9	100	2.4	3.4	—	3.4	
09	280	5.5	210	4.0	100	2.7	3.7	—	3.3	
10	280	5.8	200	4.2	100	2.9	3.8	—	3.4	
11	280	6.2	200	4.3	100	3.0	3.8	—	3.4	
12	285	6.4	200	4.3	100	3.0	3.8	—	3.3	
13	280	6.4	200	4.4	100	3.1	3.8	—	3.3	
14	275	6.4	205	4.3	100	3.0	3.5	—	3.3	
15	270	6.1	210	4.3	100	3.5	3.5	—	3.3	
16	255	6.2	220	4.3	100	3.5	4.6	—	2.5	
17	240	5.9	230	4.3	100	3.0	4.4	—	2.4	
18	255	10.8	230	4.3	100	3.3	4.6	—	2.5	
19	295	10.8	230	4.3	100	3.3	4.6	—	3.5	
20	270	10.6	230	4.3	100	3.0	4.4			

Table 49

Time	September 1955					
	b'F2	foF2	h'F1	foF1	h'E	foE
00	200	>9.1				3.6
01	200	5.1				3.3
02	230	4.7				3.1
03	<250	4.1				2.9
04	<250	4.0				3.0
05	240	3.5				3.05
06	240	3.6				3.2
07	250	6.6	240	—	130	3.2
08	260	8.0	230	4.4	110	2.8
09	290	9.0	220	4.6	110	3.2
10	300	9.9	220	4.7	100	3.4
11	290	10.5	—	4.9	110	3.6
12	300	10.6	—	5.0	110	— (4.0)
13	310	11.1	—	(5.0)	110	—
14	310	10.9	—	4.9	110	—
15	310	10.8	190	4.9	110	—
16	320	10.9	200	4.7	110	3.1
17	(300)	10.9	240	—	120	2.8
18	(280)	10.8	250	—		3.0
19	280	>10.8				2.85
20	300	>11.4				(2.8)
21	260	12.0				(3.1)
22	220	13.2				(3.3)
23	200	13.0				(3.55)

Time: 45.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 51

Time	September 1955					
	b'F2	foF2	h'F1	foF1	h'E	foE
00	(280)	3.6				2.8
01	280	3.3				2.9
02	280	3.1			2.1	2.9
03	270	2.8				3.0
04	270	2.5				3.05
05	280	2.2				2.9
06	270	3.2	—	—	1.3	3.1
07	260	4.4	250	2.9	1.8	3.3
08	280	5.1	240	3.7	2.4	3.3
09	290	5.6	230	4.1	2.7	3.2
10	310	6.2	230	4.3	2.8	3.15
11	300	6.4	240	4.4	3.1	3.15
12	320	6.4	230	4.4	3.2	3.1
13	310	6.4	230	4.4	3.1	3.1
14	300	6.5	230	4.2	2.9	3.2
15	290	6.4	230	4.1	2.7	3.2
16	270	6.0	240	3.7	2.4	3.2
17	260	5.9	260	2.8	1.8	3.2
18	250	5.4	—	—	—	3.1
19	260	5.2				2.8
20	270	4.8				2.9
21	(280)	4.2				2.9
22	(280)	4.0				2.8
23	(280)	3.7				2.8

Time: 172.5°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 53*

Time	August 1955					
	b'F2	foF2	h'F1	foF1	h'E	foE
00	270	4.3				2.6
01	270	3.9				2.85
02	285	3.6				2.8
03	285	3.3				2.8
04	285	3.2				2.85
05	300	3.6	260	3.0	(120) (1.5)	3.4
06	340	4.4	235	3.5	120	2.0
07	345	4.8	230	3.9	115	2.4
08	345	5.2	225	4.1	115	2.7
09	335	5.5	220	4.3	115	2.9
10	330	5.7	230	4.4	115	3.0
11	325	5.9	225	4.5	115	3.1
12	335	5.6	220	4.5	115	3.2
13	345	5.6	215	4.5	115	3.2
14	345	5.4	225	4.4	115	3.2
15	340	5.4	225	4.3	115	4.4
16	340	5.4	230	4.2	115	2.9
17	310	5.7	245	3.9	115	2.6
18	290	6.0	245	3.6	120	2.1
19	265	6.5	(255) (3.2)	(125) (1.8)	4.0	3.05
20	255	6.8				3.9
21	250	6.3				3.1
22	250	5.5				3.4
23	270	4.8				3.2

Time: 0.0°.

Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 50

Time	September 1955					
	b'F2	foF2	h'F1	foF1	h'E	foE
00	260	(5.9)				
01	250	(5.5)				
02	250	(4.5)				
03	250	3.8				
04	270	3.7				
05	280	3.5				
06	280	3.7	—	—	—	—
07	270	6.7	250	4.0	120	2.3
08	270	8.8	230	4.4	105	2.8
09	270	9.2	230	4.5	105	3.2
10	270	8.9	230	4.6	105	3.4
11	270	8.5	220	4.7	105	3.5
12	280	7.6	210	4.8	105	3.7
13	300	7.2	220	4.7	105	3.5
14	300	7.4	220	4.7	105	3.4
15	300	7.2	230	4.5	105	3.2
16	290	7.0	240	4.4	105	3.9
17	270	7.0	240	3.6	—	2.3
18	270	(8.0)	—	—	—	1.4
19	260	(7.1)				
20	260	7.0				
21	260	(6.7)				
22	270	(6.8)				
23	260	(6.5)				

Time: 157.5°W.

Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 52*

Time	August 1955					
	b'F2	foF2	h'F1	foF1	h'E	foE
00	265	(3.8)				
01	275	(3.3)				
02	285	(2.9)				
03	285	(2.6)				
04	290	2.7			140 (1.3)	
05	285	3.3	(250) (2.8)	3.3	115 1.6	2.9
06	320	3.9	220	3.8	120 1.9	2.7
07	355	4.3	220	3.8	110 2.3	3.0
08	355	4.9	215	4.0	110 2.6	3.1
09	345	5.0	210	4.1	110 2.8	3.3
10	345	5.3	215	4.3	105 2.9	3.3
11	355	5.2	210	4.3	105 3.0	3.2
12	350	5.2	205	4.4	105 3.1	3.1
13	350	5.2	205	4.4	105 3.1	3.1
14	350	5.1	205	4.3	105 3.1	3.1
15	365	5.2	215	4.3	110 3.0	3.1
16	345	5.2	220	4.2	110 2.8	3.1
17	325	5.4	225	3.9	110 2.6	3.1
18	300	5.4	240	3.6	120 2.2	2.9
19	275	5.7	240	3.1	130 1.9	2.7
20	250	5.9			(140) (1.7)	2.3
21	245	(5.9)				
22	250	5.0				
23	260	(4.6)				

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table S4*

Time	August 1955					
	b'F2	foF2	h'F1	foF1	h'E	foE
00	245	5.0				
01	235	4.6				
02	235	3.3				
03	230	2.9				
04	255	2.2				
05	255	2.0				
06	265	3.2				
07	(255) 6.5	240	8.1	220	120 2.8	5.1
08	305	9.1	210	4.5	110 3.2	5.2
09	320	9.6	200	4.6	(110) 3.4	5.7
10	340	9.6	200	4.6	110 3.6	5.4
11	360	9.3	200	4.7	110 3.6	5.4
12	365	9.3	200	4.7	110 3.6	5.2
13	370	9.2	200	4.7	110 3.6	4.6
14	360	9.3	200	4.6	110 3.5	4.2
15	335	9.6	205	4.4	110 3.3	2.5
16	300	9.5	210	4.4	110 2.9	3.9
17	250	9.5	225	115 2.3	3.7	2.8
18	245	9.1			150 1.8	3.3
19	250	9.0				3.1
20	245	8.7				3.4
21	230	7.6				3.7
22	225	6.0				3.3
23	230	5.0				3.1

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 55

Rarotonga I. (21.3°S, 159.8°W)							August 1955
Time	h°F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	280	3.4					2.9
01	270	3.3					3.1
02	250	3.5					3.1
03	250	3.5				1.8	3.4
04	260	3.0				1.8	3.1
05	270	2.5				1.8	3.1
06	280	2.5				2.3	3.05
07	250	4.9	250	3.0	130	1.6	3.0
08	260	5.9	240	3.9	110	2.5	3.4
09	280	7.0	240	4.3	105	3.0	3.7
10	280	7.1	230	4.4	105	3.2	3.9
11	270	6.7	230	4.4	100	3.3	3.8
12	280	6.5	210	4.5	100	3.4	3.9
13	280	6.4	210	4.5	100	3.4	4.1
14	280	6.5	220	4.4	100	3.3	4.3
15	280	6.7	230	4.3	100	3.1	4.0
16	280	6.5	240	4.1	100	2.7	3.9
17	260	6.8	250	3.5	(120)	2.2	3.9
18	250	6.6		---	---	3.4	3.3
19	240	(5.5)				3.0	(3.2)
20	250	4.4				2.5	3.1
21	260	4.0				3.0	3.0
22	250	4.1				2.6	3.0
23	280	3.5				2.0	3.0

Time: 157.5°W.

Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 56*

Falkland Is. (51.7°S, 57.8°W)							August 1955
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	300	2.6				2.6	2.8
01	300	2.6				3.0	2.8
02	295	2.6				3.0	2.9
03	285	2.5				3.0	3.0
04	270	2.6				2.9	3.0
05	245	2.6				3.7	3.2
06	225	2.4				3.0	3.3
07	230	3.7			165	1.5	3.5
08	220	4.6			130	1.8	>3.1
09	225	5.1	220	3.1	120	2.3	5.4
10	235	5.0	220	(3.5)	115	2.6	4.9
11	255	5.6	230	3.9	115	2.7	5.5
12	250	5.8	225	3.9	115	2.7	5.4
13	245	5.6	230	3.9	115	2.7	5.6
14	240	5.6	220	3.7	(120)	2.6	4.7
15	230	5.3	220	3.3	125	2.3	3.3
16	225	5.2	230	2.8	(145)	1.9	4.9
17	215	4.4					3.1
18	230	3.1					3.0
19	240	3.0					3.0
20	240	2.6					3.2
21	275	2.4					3.1
22	295	2.5					2.9
23	300	2.5					2.8

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 57

Townsville, Australia (19.3°S, 146.7°E)							July 1955
Time	h ^o F2	foF2	h ^o F1	foF1	h ^o E	foE	fEs (M3000)F2
00	240	3.3				2.1	(3.2)
01	230	3.1				2.1	(3.3)
02	240	(3.0)				2.1	---
03	230	(3.0)				2.1	---
04	220	3.0				2.1	(3.65)
05	240	2.8				2.1	(3.3)
06	240	2.8				2.1	3.25
07	230	4.5			130	1.7	2.2
08	235	5.6	230	---	100	2.3	3.1
09	250	6.0	220	4.0	100	2.8	3.6
10	270	6.2	220	4.3	100	3.1	4.1
11	270	6.4	200	4.4	100	3.2	4.2
12	270	6.2	200	4.5	100	3.2	4.3
13	285	6.3	200	4.4	100	3.2	4.2
14	275	6.1	200	4.4	100	3.2	4.2
15	260	5.8	200	4.0	100	3.0	4.3
16	240	5.7	200	3.8	110	2.7	3.7
17	230	5.7	---	---	---	2.1	3.6
18	210	5.0					3.1
19	210	4.0					3.1
20	230	3.1					2.2
21	250	3.2					2.1
22	250	3.1					3.1
23	250	3.0					(3.4)

Time: 150.0° E.

5sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 58

Brisbane, Australia (27.05°S, 153.0°E)							July 1955	
Time	h°F2	foF2	h°F1	foF1	h°E	foE	fEs	(M3000) F2
00	250	(3.5)						(3.1)
01	260	(3.8)						(3.1)
02	250	(4.0)						(3.2)
03	250	(4.0)						(3.2)
04	230	(3.8)						(3.3)
05	240	(3.3)						(3.2)
06	250	(3.2)						(3.2)
07	230	4.9			---	E		3.6
08	230	5.2	220	---	120	2.3	3.6	3.6
09	260	5.6	220	4.0	110	2.8	3.6	3.45
10	260	6.2	230	4.2	120	3.0	4.0	3.5
11	290	6.0	220	4.3	120	3.2	4.0	3.4
12	275	6.0	220	4.3	110	3.3	4.0	3.5
13	280	5.6	200	4.2	110	3.0	4.0	3.4
14	270	6.0	200	4.0	120	3.0	3.8	3.5
15	250	5.9	220	3.8	130	2.7	3.8	3.45
16	240	5.8	---	---	---	2.3	3.6	3.5
17	230	5.0			---	E	3.6	3.5
18	230	4.2						3.4
19	250	3.8						3.2
20	260	3.6						3.1
21	260	3.6						3.0
22	250	(3.5)						(3.1)
23	240	(3.5)						(3.1)

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 59

Canberra, Australia (35.3°S, 149.0°E)							July 1955
Time	h°F2	foF2	h°F1	foF1	h°E	fOE	fEs (N3000)F2
00	---	3.4					3.1
01	---	3.3					3.1
02	---	3.6					3.15
03	---	3.6					3.1
04	---	3.8					3.2
05	210	3.6					3.5
06	---	2.9					3.4
07	(210)	3.5					3.4
08	220	4.8	---	---	---	(2.0)	3.6
09	240	5.5	220	---	110	2.5	3.6
10	250	5.6	210	(4.1)	110	2.9	3.5
11	260	6.0	210	4.1	100	3.0	3.3
12	250	5.8	200	4.2	100	3.0	3.3
13	260	6.0	200	4.2	110	3.0	3.3
14	260	6.1	210	4.0	110	2.8	3.4
15	250	6.2	210	3.8	110	2.6	3.2
16	230	5.6	220	---	110	(2.3)	2.8
17	220	5.0					3.5
18	---	4.2					3.3
19	---	3.5					3.3
20	---	3.4					3.2
21	---	3.4					3.2
22	---	3.4					3.1
23	---	3.2					3.2

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 60

Hobart, Tasmania (42.9°S, 147.3°E)						July 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (N3000)F2
00	270	2.0					3.0
01	270	2.0					2.9
02	270	2.0					2.9
03	270	2.1					3.0
04	250	2.1					3.0
05	250	2.3					3.0
06	250	2.0					3.05
07	270	2.0					3.0
08	220	4.0			100	1.7	3.2
09	220	5.0			100	2.1	3.3
10	200	5.3			100	2.5	3.25
11	200	5.5			100	2.7	3.2
12	200	5.5			100	2.8	3.2
13	200	6.0	---	---	100	2.8	3.2
14	210	6.2			100	2.6	3.2
15	200	5.8			100	2.2	3.2
16	220	5.5			100	1.9	3.3
17	220	5.0			---	---	3.1
18	220	4.0					3.0
19	240	3.2					3.0
20	250	2.5					3.0
21	250	2.5					3.0
22	250	2.1					3.0
23	270	2.0					3.0

Time: 150,0° E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 61*

Falkland Is. (51.7°S, 57.8°W)	July 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.5				2.6	2.8	
01	300	2.4				1.5	2.8	
02	290	2.4					2.9	
03	285	2.4				1.5	2.9	
04	275	2.3				1.4	3.0	
05	250	2.4				4.8	3.2	
06	235	2.2				2.8	3.3	
07	235	2.1			(175)	(1.2)	1.9	3.3
08	220	3.8			150	1.6	2.9	3.6
09	215	4.4			130	1.8	3.5	3.8
10	220	4.7	(205)	(3.2)	125	2.2	4.8	3.7
11	235	5.0	215	3.4	120	2.4	5.1	3.6
12	240	5.6	230	3.5	120	2.5	5.0	3.6
13	230	5.5	225	3.5	125	2.4	5.1	3.8
14	220	5.0	(230)	(3.2)	130	2.3	3.8	3.8
15	230	4.9			140	2.0	3.7	3.7
16	215	4.4			(170)	1.6	3.1	3.7
17	225	3.1					3.0	3.3
18	235	2.6					2.0	3.3
19	250	2.5					2.2	3.2
20	250	2.3					2.2	3.3
21	265	2.3					2.1	3.1
22	285	2.4					2.6	2.9
23	285	2.4					2.3	2.9

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 63

Townsville, Australia (19.3°S, 146.7°E)	May 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(3.2)				2.1	(3.3)	
01	250	(3.0)				2.2	---	
02	240	(3.2)				2.3	---	
03	240	>3.5				2.1	---	
04	230	3.1				2.2	---	
05	240	2.8				2.2	---	
06	240	3.0				2.4	3.3	
07	230	5.0			130	1.9	3.0	3.5
08	240	6.0	230	3.7	100	2.3	3.5	3.6
09	250	6.8	220	4.1	100	2.8	3.6	3.5
10	250	7.0	210	4.3	100	3.1	3.7	3.5
11	260	6.4	210	4.4	100	3.2	3.4	
12	275	6.8	200	4.4	100	3.3	4.2	3.4
13	260	7.2	200	4.3	100	3.3	4.3	3.4
14	260	6.6	200	4.3	100	3.2	4.3	3.5
15	260	6.5	210	4.0	100	3.0	4.4	3.4
16	250	6.6	210	3.7	100	2.6	4.4	3.5
17	230	6.0	---	---	---	2.1	3.8	3.5
18	210	5.2				3.2	3.5	
19	220	3.8				2.9	3.45	
20	230	3.2				2.1	3.3	
21	250	3.2				2.1	3.1	
22	250	3.5				2.1	(3.3)	
23	240	>2.9				2.1	(3.15)	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 65

Canberra, Australia (35.3°S, 149.0°E)	May 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.6					3.1	
01	250	3.8					3.1	
02	250	3.9					3.1	
03	250	3.9					3.1	
04	240	4.0					3.2	
05	220	3.8					3.4	
06	210	3.3					3.4	
07	210	4.3					3.6	
08	220	5.5	---	---	100	2.1	3.6	
09	240	5.8	210	3.7	100	2.6	3.5	
10	250	6.0	220	4.0	100	2.9	3.1	
11	250	6.4	200	4.2	100	3.0	3.4	3.6
12	250	6.5	200	4.2	100	3.0	3.4	3.4
13	250	6.6	200	4.2	100	3.0	3.2	3.4
14	250	6.8	210	4.0	100	2.9	3.1	3.4
15	240	6.8	200	3.7	100	2.7	3.0	3.6
16	210	6.2	---	---	100	2.2	3.6	
17	210	5.6	---	---	<1.7	2.0	3.5	
18	210	4.2					3.4	
19	240	3.8					3.25	
20	240	3.7					3.3	
21	240	3.8					3.3	
22	250	3.6					3.1	
23	250	3.6					3.2	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 62*

Ibadan, Nigeria (7.4°N, 4.0°E)	May 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	4.5						2.1 (2.8)
01	275	4.0						1.8 (3.4)
02	275	(3.1)						1.5 (3.1)
03	265	2.4						2.0 (3.35)
04	260	1.8						1.5 (3.5)
05	270	(1.6)						---
06	245	5.3						126 1.8 3.7 3.3
07	(275)	7.1	227					108 2.6 4.8 3.2
08	300	8.2	215					104 3.0 6.9 3.05
09	330	8.7	205					104 3.2 10.4 2.75
10	345	8.6	200					100 3.4 10.5 2.55
11	350	8.2	199					100 3.5 10.6 2.5
12	350	8.2	198					101 3.5 10.6 2.55
13	355	8.3	197					101 3.4 10.2 2.55
14	335	8.8	194					104 3.3 9.4 2.6
15	315	9.2	201					106 3.1 6.8 2.65
16	305	9.2	210					109 2.7 4.3 2.7
17	(290)	9.3	232					111 2.1 3.8 2.8
18	245	9.5						137 1.5 3.6 2.9
19	255	8.8						3.7 2.95
20	265	7.5						3.0 3.1
21	255	6.6						2.3 3.2
22	260	5.6						1.8 (3.1)
23	260	4.8						1.5 (3.25)

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 63

Brisbane, Australia (27.5°S, 153.0°E)	May 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(4.0)						3.0
01	250	4.0						3.1
02	250	4.4						3.05
03	240	4.2						(3.1)
04	230	4.0						3.2
05	230	3.7						(3.2)
06	250	3.5						(3.15)
07	225	5.3						3.6
08	230	5.9	230					110 2.2 3.5
09	250	6.3	225					120 2.8 3.4
10	250	6.7	220					120 3.0 3.6 3.4
11	270	6.6	220					110 3.2 3.6 3.35
12	260	6.5	210					120 3.2 (4.2) 3.4
13	260	6.5	220					120 3.2 (3.6) 3.3
14	260	6.7	220					120 3.1 (3.8) 3.3
15	250	6.9	---					120 3.4 (4.4) 3.45
16	230	6.2						120 E 3.0 3.5
17	220	5.6						120 4.3 3.25
18	220	4.3						120 3.8 3.1
19	250	3.8						120 3.0 3.1
20	250	3.8						120 3.1 3.2
21	260	4.0						120 4.0 (3.1) 3.2
22	240	(4.0)						120 4.0 (3.1) 3.0
23	250	(4.0)						120 4.0 (3.1) 3.0

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 65

Hobart, Tasmania (42.9°S, 147.3°E)	May 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.0						3.0
01	290	2.0						3.0
02	290	2.0						3.0
03	280	2.0						3.0
04	270	2.0						3.0
05	250	2.0						3.05
06	250	2.0						3.1
07	240	2.6						3.1
08	220	4.5						3.2
09	220	5.0						3.2
10	210	5.3	---					100 2.5 2.7 3.2
11	200	5.7	---					100 2.7 3.0 3.2
12	200	6.0						100 2.8 3.0 3.1
13	200	6.0						100 2.7 3.1 3.1
14	210	6.5						100 2.6 2.9 3.1
15	220	6.2						100 2.3 3.2 3.2
16	220	6.2						100 1.9 3.2 3.2

Table 67*

Ibadan, Nigeria (7.4°N, 4.0°E)							April 1955	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	(6.0)					---	
01	275	(5.2)					---	
02	250	(4.1)					---	
03	230	(3.1)					3.4	
04	235	2.1					3.4	
05	245	1.6				3.1	3.4	
06	240	4.8	---		125	1.7	3.8	3.4
07	275	6.6	230		110	2.4	4.5	3.3
08	305	7.8	215		105	2.9	9.6	3.0
09	325	8.6	200	4.4	100	3.1	10.6	2.6
10	355	8.1	200	4.5	100	3.3	10.8	2.4
11	355	7.7	200	4.5	(100)	3.4	11.4	2.5
12	340	8.1	200	4.5	100	3.4	10.6	2.6
13	340	8.4	200	4.4	100	3.4	10.2	2.6
14	335	8.9	200	4.4	105	3.3	9.0	2.6
15	320	9.3	200		105	3.0	4.9	2.6
16	295	9.5	215		110	2.6	3.9	2.7
17	(280)	9.7	235		115	2.1	3.8	2.7
18	260	9.6	---		(135)	1.4	3.0	2.7
19	295	8.8					2.7	
20	300	8.1					2.7	
21	300	8.1					(2.8)	
22	280	7.8					(2.8)	
23	280	(6.9)					---	

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.

*Average values except foF2 and fEs, which are median values.

Table 69*

Campbell I. (52.5°S, 169.2°E)							September 1951	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	300	2.2					2.7	
06								
07	270	4.6	240	3.7	125	2.5	3.0	
08	320	5.0	240	3.9	120	2.7	3.0	
09	300	5.6	240	4.2	120	2.9	3.0	
10	350	5.6	240	4.3	115	3.0	2.9	
11	330	5.6	240	4.3	120	3.2	3.0	
12	340	6.0	230	4.3	115	3.2	3.0	
13	330	5.8	230	4.3	120	3.1	3.0	
14	300	6.3	240	4.1	120	3.0	3.0	
15	300	6.1	240	4.0	120	2.8	3.0	
16	300	6.0	240	3.5	120	2.4	3.0	
17	250	5.9	---	---	120	2.0	3.0	
18	250	5.0					2.9	
19	290	4.4					2.9	
20								
21	290	3.8					2.65	
22								
23	300	3.5					2.7	

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

*Observations taken on a 16-hour working schedule.

Table 71*

Campbell I. (52.5°S, 169.2°E)							July 1951	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	270	2.3				1.8	3.0	
06								
07	250	3.0			E	1.5	3.1	
08	240	4.4	230	2.7	110	2.0	3.3	
09	240	5.0	230	3.0	110	2.2	3.3	
10	250	5.8	220	3.4	110	2.5	3.35	
11	250	6.3	220	3.6	110	2.7	3.3	
12	250	6.4	220	3.6	110	2.7	3.3	
13	240	6.4	220	3.6	115	2.6	3.35	
14	240	6.7	230	3.4	115	2.5	3.3	
15	240	6.8	230	3.0	120	2.2	3.3	
16	230	6.3	220	3.1	110	1.7	3.2	
17	220	5.1	---	---	E	3.1		
18	240	4.2				3.0		
19	260	3.3				3.0		
20								
21	290	3.1				2.9		
22								
23	290	3.0				2.8		

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

*Observations taken on a 16-hour working schedule.

Table 67*

April 1955

Table 68*

October 1951

Campbell I. (52.5°S, 169.2°E)							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	
00							
01							
02							
03							
04							
05	280	4.0					
06							
07	320	5.3	250	4.0	120	2.8	2.9
08	330	5.6	240	4.3	110	3.1	3.0
09	340	5.8	230	4.5	110	3.2	3.0
10	330	6.4	230	4.6	110	3.3	2.9
11	340	6.6	230	4.6	110	3.3	2.9
12	330	6.6	230	4.6	110	3.4	2.9
13	320	6.6	240	4.5	110	3.3	3.0
14	310	6.6	240	4.4	110	3.2	2.9
15	300	6.8	240	4.2	110	3.0	3.0
16	300	6.8	240	4.0	110	2.7	2.9
17	280	6.7	250	3.6	120	2.5	2.9
18	260	6.8	260	3.1	130	2.0	2.9
19	260	6.6	---	---	135	1.5	2.9
20							
21	260	5.4					2.7
22							
23	290	4.4					1.9

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

*Observations taken on a 16-hour working schedule.

Table 69*

September 1951

Table 70*

August 1951

Campbell I. (52.5°S, 169.2°E)							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	
00							
01							
02							
03							
04							
05	300	2.6					1.6
06							
07	250	4.0	---	---	120	2.0	2.0
08	250	4.6	240	3.5	120	2.4	3.2
09	250	5.0	240	3.5	120	2.6	3.3
10	270	5.4	220	3.8	120	2.7	3.1
11	280	5.6	230	4.0	120	2.9	3.2
12	280	6.0	230	4.1	120	2.9	3.2
13	270	6.0	230	4.0	120	2.8	3.15
14	280	6.2	230	3.9	120	2.7	3.1
15	270	6.2	230	3.6	120	2.5	3.15
16	250	6.0	240	3.1	120	2.0	3.1
17	240	5.4					3.1
18	250	4.8					2.9
19	260	4.1					2.9
20							
21	280	3.0					2.8
22							
23	320	2.8					2.5

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

*Observations taken on a 16-hour working schedule.

Table 71*

July 1951

Table 72*

October 1950

Campbell I. (52.5°S, 169.2°E)							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	
00							
01							
02							
03							
04							
05	260	3.8					1.8
06							
07	300	5.2	240	3.9	120	2.6	3.1
08	300	5.5	240	4.4	110	3.0	3.0
09	320	5.6	230	4.5	120	3.2	3.0
10	340	5.8	230	4.6	110	3.3	3.0
11	350	6.0	220	4.6	110	3.3	3.0
12	340	6.2	220	4.6	110	3.3	2.95
13	330	6.3	230	4.6	110	3.3	2.9
14	340	6.6	230	4.5	110	3.2	2.9
15	310	6.8	230	4.3	110	3.0	3.0
16	290	6.8	240	4.0	120	2.7	3.0
17	270	6.3	250	4.0	120	2.4	3.0
18	260	6.2					2.2
19	260	6.3					2.0
20							
21	280	5.5					2.8
22</							

TABLE 73

21

IONOSPHERIC DATA

foF2, Mc, February 1956

75°W Mean Time

Station: Washington, DC. Lat. 38.7°N. Long. 77.1°W. Sweep I.O. Mc ta 250 Mc in 13.5 sec. Manual Automatic

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
01	43	47	45	42	32	30	29	38	62	74	98	103	96	95	96	96	88	85	80	64	58	48	52	45	01	
	F	F	F	U	F	U	F	F									U S									
02	35	31	33	33	32	38	39	38	38	58	77	82	102	100	96	'94	96	92	95	84	64	55	47	43	41	02
	F	U	F	F	F	F	F	F																		
03	40	38	36	37	34	22	19	32	58	77	83	90	96	82	79	86	88	79	76	65	52	45	45	38	03	
	F																									
04	39	32	23	28	30	29	27	36	58	72	82	80	100	93	82	82	86	83	82	73	63	45	35	31	04	
	F	F	F	F	F	F	F	F										U J							F	
05	30	28	32	35	37	37	38	45	63	72	78	84	90	94	86	84	78	79	73	68	58	53	42	41	05	
	F	F	J	U	J	U	J																			
06	31	24	23	22	24	27	30	46	70	82	93	92	98	87	86	86	88	90	78	56	51	39	34	31	06	
	F	F	F	F	F	F	F																			
07	29	31	30	32	33	33	31	41	64	76	79	79	90	87	99	80	71	70	65	58	48	39	32	30	07	
	F																									
08	28	28	27	27	31	31	31	42	70	71	82	86	94	90	92	83	77	84	70	60	55	46	32	30	08	
09	29	29	31	34	38	39	36	48	68	76	76	83	86	88	88	90	90	78	74	52	55	44	35	31	09	
																		U S								
10	33	30	30	32	33	34	33	44	66	78	82	92	88	90	86	85	92	85	76	62	52	45	45	44	10	
11	43	43	43	45	45	40	39	50	76	82	86	90	105	106	108	103	97	98	93	87	80	67	58	55	11	
									F	F	F	F	F	F	F						F	F	F	F		
12	50	42	45	47	37	25	18	35	67	92	98	104	102	98	103	96	95	86	76	60	54	52	46	44	12	
	F	F	F	F	F	F	U	P	F												U F	F	F	U F		
13	44	35	33	32	32	30	28	40	67	75	92	90	96	100	97	90	88	84	73	62	53	50	43	38	13	
	F	F	F	F	F	U	F	F													F					
14	34	34	33	31	30	24	22	38	72	76	78	92	98	90	88	87	86	84	79	64	62	52	44	41	14	
	F	F	F	F	F	F	F	F																		
15	38	36	35	35	32	30	25	45	80	84	93	104	98	97	98	94	93	92	90	74	70	59	50	45	15	
	F	F	F	U	F	U	F	F								U P										
16	38	38	40	44	43	35	26	48	72	90	102	102	112	110	112	115	102	100	94	78	70	60	54	51	16	
17	48	48	46	42	40	36	31	50	76	90	105	111	118	111	105	103	105	98	92	77	73	61	54	50	17	
18	47	45	44	45	44	40	38	58	79	95	98	103	107	103	109	110	110	100	93	76	72	64	57	50	18	
19	48	47	44	44	42	39	34	54	70	85	100	107	110	110	107	100	96	96	90	80	68	59	51	48	19	
	F	F	F	F	F	F	F	F									U S									
20	48	49	47	45	44	39	32	56	80	94	98	107	113	115	113	110	106	100	94	85	76	58	53	51	20	
																	U S									
21	49	49	49	48	45	41	38	58	84	101	104	104	111	114	110	114	111	104	98	87	72	67	59	55	21	
										H	H															
22	55	57	56	54	49	44	44	56	84	92	103	107	106	115	113	113	106	102	94	80	72	62	53	47	22	
																		U S	U S	U S	U S					
23	48	46	45	43	42	37	34	56	86	92	101	106	106	115	115	112	118	106	100	80	74	58	55	52	23	
24	48	47	47	44	41	35	31	57	82	98	102	107	111	112	108	110	107	106	100	87	74	63	55	47	24	
	F	F	U	F	F	U	F	U	F	H	F										F	F	F	F		
25	35	28	27	39	35	34	38	41	44	54	49	58	61	59	64	63	65	66	67	63	52	49	40	40	25	
	F	F	F	U	F	F	U	F	F								J	U S	J	J	J	J	J	J		
26	38	32	30	26	22	21	20	42	55	62	70	78	86	88	90	88	85	92	91	77	71	63	62	63	26	
27	66	66	60	43	38	37	38	52	72	83	90	98	103	102	100	96	102	94	98	84	78	76	68	55	27	
																	U S									
28	52	52	46	43	36	29	24	54	84	110	102	112	117	115	115	113	109	105	94	74	64	58	62	63	28	
	U F	F	F	F	F	U F																				
29	48	44	44	42	25	19	26	48	68	82	90	103	98	107	107	104	96	97	83	75	61	53	52	44	29	
MED	43	38	40	42	37	34	31	46	70	82	92	102	100	98	99	96	93	92	84	74	63	53	51	45		
NO	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29		

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 74
IONOSPHERIC DATA

foF2(half-hourly), Mc, February 1956

75°W Mean Time

Station: Washington, DC. Lat 38.7°N. Long 77.1°W. Sweep I.O. Mc to 25.0 Mc in 13.5 sec. Manual Automatic

	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2300			
	U S	49	44	H	33	31	29	29	50	66	82	100	101	92	98	100	86	85	76	72	61	54	54	50	41	F	
01	45	49	44	44	33	31	29	29	50	66	82	100	101	92	98	100	86	85	76	72	61	54	54	50	41	01	
	F	F	U F	J	I																					F	
02	31	32	32	35	40	38	35	49	72	77	92	103	103	91	96	90	93	89	68	64	52	44	42	37	02		
	F	F	F	F	F	F	F	F																		F	
03	40	37	37	36	30	20	19	45	63	71	86	93	93	79	80	90	82	77	68	57	46	45	43	39	03		
	F	F	F	F	F	F	F	F	U J	70	82	75	98	96	86	80	86	81	82	76	69	55	38	32	29	04	
04	36	28	28	29	30	29	25	51	70	82	75	98	96	86	80	86	81	82	76	69	55	38	32	29	04		
	F	F	F	F	F	F	F	F																		F	
05	30	30	33	36	36	39	40	60	71	74	80	90	89	94	82	85	78	78	76	68	55	49	40	36	05		
	F	F	F	F	F	F	F	F	U S	U J	74	78	84	86	93	82	86	96	86	78	65	56	43	35	31	31	06
06	26	24	23	22	25	29	33	60	U S	U J	74	78	84	86	93	82	86	96	86	78	65	56	43	35	31	31	06
	F	F	F	F	F	F	F	F																		F	
07	29	30	31	32	33	31	32	57	72	75	82	81	87	90	86	77	71	74	64	57	44	35	30	29	07		
	F	F	F	F	F	F	F	F																		F	
08	28	27	27	30	32	31	32	61	72	74	87	90	94	94	86	80	77	76	70	60	51	38	30	30	08		
	F	F	F	F	F	F	F	F																		F	
09	29	30	33	35	40	38	38	60	77	77	82	85	90	89	88	88	86	75	68	60	50	38	33	32	09		
	F	F	F	F	F	F	F	F																		F	
10	31	31	30	32	34	32	34	60	74	82	86	90	92	90	87	98	90	82	68	60	50	47	45	41	10		
	F	F	F	F	F	F	F	F																		F	
11	43	42	45	46	42	39	40	65	82	86	92	97	109	107	93	98	99	93	89	86	72	60	55	53	11		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F		
12	48	44	44	42	29	22	24	55	85	90	102	102	96	102	98	96	91	80	69	55	52	49	44	43	12		
	F	F	F	F	F	F	F	F	U F	U F	U F	U F	U F	U F	U F	U F	U F	U F	U F	U F	U F	U F	U F	U F	U F		
13	39	35	32	33	30	30	29	56	70	86	90	90	100	99	90	87	84	76	64	56	52	47	39	36	13		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
14	35	33	32	31	25	24	25	56	64	87	80	97	96	87	88	88	86	82	70	64	58	49	40	40	14		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
15	35	35	33	34	31	25	29	63	80	93	102	96	98	100	100	97	94	91	80	74	64	55	48	41	15		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
16	39	39	43	39	41	30	31	62	84	96	107	110	114	105	110	105	102	102	86	74	64	57	53	49	16		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
17	48	48	43	41	39	34	35	67	84	91	107	106	111	110	107	107	104	96	84	77	65	56	50	47	17		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
18	46	44	44	45	43	37	42	71	86	96	114	115	102	106	108	110	105	94	88	76	68	60	56	50	18		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
19	50	45	44	43	42	38	39	70	94	98	107	110	115	113	103	98	96	92	86	76	65	57	49	48	19		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
20	47	47	45	45	44	34	38	70	86	94	102	110	112	115	105	110	102	97	93	78	66	55	51	50	20		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
21	49	49	49	48	45	39	43	72	94	102	106	111	114	113	111	111	110	102	94	80	70	60	58	52	21		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
22	56	58	56	52	49	44	46	70	89	100	100	110	113	115	113	107	107	96	89	75	64	57	49	47	22		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
23	48	45	44	43	39	35	41	70	87	94	99	106	114	117	113	115	110	107	94	76	66	57	54	50	23		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
24	48	47	46	42	38	33	39	70	88	98	106	110	112	108	110	110	106	105	95	83	68	60	51	47	24		
	I	F	I	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
25	31	27	34	37	36	32	35	44	46	54	55	60	59	58	66	61	64	66	64	57	50	43	40	40	25		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	J	J	J	J	J			
26	35	30	27	26	23	19	32	50	57	66	81	88	90	88	88	83	90	91	85	77	66	63	66	62	26		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
27	66	66	52	40	38	37	40	62	78	84	94	105	100	102	101	100	100	98	90	74	68	72	62	56	27		
	F	F	F	F	F	F	F	F	U S	U S	U S	U S	U S	U S	U S	U S	U S	U S	U S	J	J	J	J	J			
28	50	50	45	42	33	23	36	72	102	107	110	113	115	110	115	115	105	100	92	68	60	58	64	54	28		
	F	F	F	U F	U F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
29	48	44	46	31	16	23	33	62	77	99	96	100	105	112	107	102	97	95	81	65	59	54	47	42	29		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
MED	40	39	43	36	36	32	35	61	77	86	94	100	100	100	98	97	93	91	80	68	59	54	48	42			
NO	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29			

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 75
IONOSPHERIC DATA

foF1, Mc, February 1956

Station: Washington, D.C. Lat. 38.7°N. Long. 77.1°W. Sweep 1.0 Mc to 250 Mc in 13.5 sec. Manual Automatic

23

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean Time
01										Q	Q	L	L	L	L	L	Q								
02										Q	L	L	L	L	L	L	L	Q							
03										L	L	L	L	L	L	L	Q	Q							
04										Q	L	L	L	L	L	L	L	L	Q						
05										Q	L	L	L	L	L	L	L	L	Q						
06										Q	Q	L	L	H	L	L	L	L	L						
07														470											
08										Q	L	L	L	L	L	H	L	L	Q						
09										Q	L	L	L	L	L	L	L	L	L						
10										Q	L	L	L		420	L	L	390	L	Q					
11										L	L	L	L	L	L	L	L	L	Q						
12										Q	L	L	L	L	L	L	L	L	Q						
13										Q	L	B	L	L	L	L	L	L	Q						
14										Q	L	L	L	L	L		L	Q	Q						
15										Q	Q	L	L	L	L	L	L	L	Q						
16										Q	Q	L	L	L	L	L	L	L	Q						
17										Q	L	L	L	L	L	L	L	L	Q						
18										Q	L	L	L	L	L	L	L	Q	Q						
19										Q	Q	B	L	L	L	L	L	L	Q						
20										Q	Q	Q	L	L	L	L	L	L	Q						
21										Q	Q	L	L	L	L	L	L	L	Q						
22										Q	Q	L	L	L	L	L	L	L	Q						
23										Q	Q	L	L	L	L	L	L	L	Q						
24										Q	Q	L	L	L	L	L	L	L	Q						
25										Q	Q		440	470	480	500	480	L	L	Q	Q				
26										Q	Q	L	L	L	L	L	L	L	Q	Q					
27										Q	L	L	L	L	L	L	L	L	Q	Q					
28										Q	Q	L	L	L	L	L	L	L	Q						
29										Q	Q	L	L	L	L	L	L	L	Q						
MED														1	1	3	1	3	1						
NO																									

TABLE 76
IONOSPHERIC DATA

foE, Mc, February 1956

75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep I.O. Mc to 250.0 Mc in 13.5 sec.

Manual Automatic

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23														
01						H	I	A	210	260	300	310	320	320	300	290	240	E S																				
02						A	A	A	U	U	U	A	320	320	310	A	280	250	U R																			
03						U	A	H	210	250	A	A	A	A	A	A	A	180																				
04						A			260		A	A	310	320	300	290	250	A																				
05						U	U	U	210	270	300	310	320		A	A	A	A	A																			
06						A	A				300	310	320	320	310	280	240	180																				
07						180	U	A	250		A	A	A		320	310	280	250	170																			
08						U	A	H	220	270	300	A	A	A	H	310	290	250	190																			
09						A	A				310	330	330	330	310	290	230	200		U A																		
10						220	280				310	330	340	330	320	300	270	230		U P																		
11						220	280				A	A		340	340	330	310	250	190																			
12						H	H	H	230	270	310	330	340	340	320	300	280	220	F																			
13						A	I	B	280	310	340	350	350	350	340	310	280		A																			
14						H			240	290	310	330	350	350	340	310	290	220	U P																			
15						H			240	300	330	340	360	360	350	340	310	270	240																			
16						A	A		240			350	360	360	360	370	320	280	230	U A																		
17						A			280	330	340	350		H					U A	310	290	230																
18						H			250	300	320	340	360	360	330	340	330	290	B																			
19						U	A	U	250	300	B	B		380	380	360	320	U A	A	B																		
20						U	P		170	270	310	340	360	370	350	360	340	290	230																			
21						E	S	H	160	250	300	330	350	360	360	350	330	290	200	H																		
22						H			250	300	330	340	350	360	340	330	290	R																				
23						H			180	260	300	330	340	350	360	350	340	290	230																			
24						U	A		170	250	310	340	360	370	380	350	320	300	260	U R																		
25						U	S		240	300	320	340	350	350	330	330	310	280	230	170																		
26						I	A		180	240	290	320	340	340	350	330	330	280	230	170	U R																	
27									230	280	320	340	350	350		I A	340	340	320	290	R	S																
28						A	A	A		320	A	A	A	A	A	A	A	230																				
29						R	H		240	290	320	330	350	340	330	310	310	280	C																			
MED									170	240	280	320	340	350	340	330	310	280	220																			
NO									5	22	24	22	22	25	25	25	26	25	21	2																		

TABLE 77
IONOSPHERIC DATA

25

fEs, Mc, February 1956

Station: Washington, D.C. Lat. 38.7°N. Long. 77.1°W. Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual Automatic

75°W Mean Time

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
01	S	S	S	S	E	S	S	S	G	50	25		G	G	G	G	G	S	S	24	72	45	42	26	
02	22	S	S	S	S	S	S	H	H	37	34	35	41	45	36	39	22	G	S	17	33	28	32	39	
03	S	S	S	S	S	S	S	H	H	21	24	40	32	29	37	44	61	54	37	38	33	20	S	S	
04	40	35	21	S	S	S	S	S	H	33	33	41	68	40	38	21	21	34		S	S	S	S	S	
05	28	27	22	S	S	E	S	H	G	25	30	36	30	41	37	37	33	23	36	S	S	S	S	S	
06	S	S	S	S	E	S	S	S	H	22	22	24	34	28	31		G	G	G	G	S	S	S	.S	
07	S	S	S	E	S	S	S	G		43	40	45	40	39	36		G	G	S	S	S	S	S	06	
08	S	S	S	S	S	S	S	H	G	31	37	40	40	38	35		G	G	S	S	29	S	S	08	
09	S	S	S	S	S	S	S		G	42	36	40	36	40	35	43	40	34		G	S	31	36	30	
10	S	S	S	S	Y	S	S	G		34	27	24	38	67		G	G	G	G	S	S	S	S	S	
11	S	S	S	S	S	S	S		G	40	52	56	40	52	56		G	G	G	G	S	S	S	S	
12	S	S	S	E	S	S	S			19	23	26					22	18		G	S	S	S	S	
13	S	E	S	E	S	S	S			26	36					26	36	37	21	S	S	S	S	S	
14	S	S	S	E	E	E	S	S		30	32					G	G	G	G	S	S	S	S	S	
15	S	E	E	E	E	E	S	S		21	68	23		44		G	G	G	G	S	22	21	S	S	
16	S	S	S	S	S	S	S	S		42	40	33				G	G	G	G	S	S	S	S	S	
17	S	S	S	S	S	S	S	S		35	30	36				33	48	36	43	35	20	S	S	S	
18	S	S	S	E	S	S	S	S	G	36	40	48	40	42	36	34		G	G	G	S	S	S	S	
19	S	S	S	S	S	E	E	S	G	27	30					22	37	42	39	21	S	S	S	S	
20	S	S	S	S	S	S	S	G		45	42	42	30			G	G	G	G	18	19	32	30	S	
21	30	S	S	S	S	S	S	G		36	40	48	40	42		G	G	G	G	20	S	S	S	S	
22	E	S	S	E	E	E	S	S	G							17	40		G	G	S	S	S	S	
23	S	E	S	S	S	S	S	S	S	67	28					37	21	20	5	37	31	S	S	S	
24	S	S	S	S	E	S	S	G		33	59					G	G	Y	40	36	G	S	S	S	
25	S	S	S	S	S	S	S	G								G	G	G	G	25	11	S	S	S	
26	E	E	S	E	E	E	E	E		20	25					G	Y	G	G	30	27	G	S	S	
27	S	E	E	E	E	E	S	G		31						G	G	G	G	S	S	Y	S		
28	S	E	S	S	27	33	S	H	H	20	30	31	37	36	37	39	33	29	G	S	E	S	S	S	
29	S	S	S	S	Y	E	S	G	G	41						G	G	G	G	S	S	S	S	29	
MED																25	34								
NO	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29

TABLE 78
IONOSPHERIC DATA

f min, Mc, February 1956

Station: Washington DC Lat. 38.7°N. Long. 77.1°W. Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

75°W Mean Time

Manual Automatic

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
01	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	14	16	11		15	16	16	16	16	16	17	16	17	17	19	16	16	15	16	15	16	16	01	
02	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	15	14	12	14	16	16	16	16	16	16	16	16	17	16	16	16	16	16	16	16	16	16	02	
03	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	15	12	16	12	16	16	16	16	16	16	17	17	16	16	16	15	16	15	16	16	15	15	03	
04	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	14	16	13	11	13	15	15	15	15	15	16	16	17	16	16	15	15	15	16	15	15	15	04	
05	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	16	12	12	12	12	15	15	16	15	16	16	16	16	16	16	15	15	16	16	16	16	16	05	
06	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	15	12	11		15	16	16	16	16	16	15	16	16	16	16	15	16	14	17	15	15	16	06	
07	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	12	11		12	11	15	16	16	16	16	16	16	16	16	16	15	16	14	16	15	16	15	07	
08	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	14	12	13	13	13	13	16	15	16	16	15	16	16	16	16	15	15	15	16	17	16	08		
09	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	16	16	12	13	16	16	15	16	16	16	16	21	19	16	16	16	16	15	15	16	15	16	09	
10	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	16	13	15	13	16	16	16	16	16	16	16	17	16	16	16	16	16	16	16	16	16	16	10	
11	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	20	15	12	16	15	15	16	16	16	16	16	20	19	22	17	16	15	16	16	17	16	17	11	
12	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	15	13		12	12	12	15	15	15	16	16	17	16	16	16	16	15	15	16	15	16	16	12	
13	E	S	E	E	S	E	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	15		11		12	16	16	16	47	17	20	20	18	16	16	16	15	16	16	16	16	16	13	
14	E	S	E	S	E	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S		
	16	15	11		12	12	15	15	16	16	16	20	17	16	16	20	16	16	16	16	16	16	16	14	
15	E	S	E	E	E	E	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	13	17	15	16	15	18	22	22	20	17	20	16	16	15	16	16	16	16	17	16	16	17	15	
16	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	12	12	13	13	15	16	17	16	16	18	18	24	23	30	23	20	16	15	16	16	16	16	16	16	
17	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	15	14	13	14	16	16	16	16	16	16	16	21	16	16	16	16	16	16	15	16	16	16	17	
18	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	15	16	12	15	16	16	16	17	18	18	19	17	16	16	16	16	16	17	16	16	16	16	18	
19	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	16	16	16	16	13	17	22	16	16	45	35	28	20	24	17	16	18	17	16	16	16	16	19	
20	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	12	12	12	11		15	16	16	16	18	15	16	20	20	15	15	15	16	15	15	15	15	16	20	
21	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	16	13	13	12	16	16	16	16	16	16	16	20	17	18	16	16	16	16	16	16	16	16	21	
22	E	E	S	E	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	12	13		15	14	15	16	16	16	16	16	16	16	16	16	16	16	17	17	17	15	16	16	22	
23	E	E	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	15	12	12	16	16	16	15	16	16	17	18	16	17	16	17	16	16	16	16	16	16	16	16	23	
24	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	16	16	14	13	16	16	16	16	16	16	16	25	18	17	16	17	18	16	16	16	16	16	24	
25	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	16	15	18	18	16	17	17	16	17	22	16	18	16	19	18	18	15	15	15	15	12	25		
26	E	E	E	S	E	E	E	S	E	S	E	S	E	S	E	S	U	S	E	S	E	S	E		
	12										16	16	19	40	26	17	17	16	20	15	15	15	15	26	
27	E	S	E	E	E	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	E		
	16										16	24	16	16	17	18	20	16	16	17	18	16	13	27	
28	E	S	E	E	S	E	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E		
	16	12	13								16	15	16	16	21	21	19	22	16	16	16	16	16	28	
29	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	C	C	E	S	E	S	E		
	16	15	13	13							16	15	15	16	21	16	16	18	20	26	20	16	15	15	29
MED																									
NO																									

TABLE 79
IONOSPHERIC DATA

27

hf2, Km, February 1956

Station: Washington D.C. Lat. 38.7°N. Long. 77.1°W. Sweep I.O. Mc to 25.0 Mc in 13.5 sec. 75°W Mean Time

Manual Automatic

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
01	U S	U S	U S	U S	U S	U S	U S	U S	U S	U S	240	270	290	230	220	210	260	260	250	260	240	230	220	220	230		
	300	270	250	235	240	270	290	230	220	210	260	260	250	260	260	240	230	220	220	230	260	270	250	230	01		
02	U S	U S	U S	U S	U S	U S	U S	U S	U S	U S	240	270	290	250	250	240	220	230	250	250	230	230	240	250	280	02	
	260	280	270	270	290	250	250	240	220	220	230	250	250	230	230	240	250	250	230	230	230	230	260	280	U A		
03	270	260	260	260	230	250	280	250	240	220	240	240	250	250	240	240	260	230	230	230	230	220	260	250	240	03	
	U S																										
04	260	250	290	270	260	240	240	230	220	240	240	240	240	250	240	240	250	230	240	220	220	220	220	240	250	04	
	270	270	280	280	270	240	230	220	210	220	230	250	240	260	240	240	230	220	220	220	230	220	220	220	230	05	
05	U S	U S	U S	U S	U S	U S	U S	U S	U S	U S	270	270	280	270	240	230	220	210	220	230	250	240	260	240	250	06	
	230	260	250	260	270	270	260	240	210	210	260	250	270	270	250	250	230	230	210	210	220	230	250	250	250	06	
06	U S																										
07	270	270	260	240	250	240	250	230	220	220	250	240	250	250	240	250	230	220	240	210	220	220	230	240	270	07	
08	260	250	270	280	260	240	250	240	220	230	240	250	260	260	250	240	240	240	220	220	230	220	240	270	08		
09	270	290	290	270	270	250	250	240	220	240	240	250	270	250	260	240	240	220	230	210	230	240	240	270	09		
10	270	270	260	270	270	250	270	240	220	230	260	250	250	250	260	250	250	230	220	210	220	240	260	260	10		
	U S																										
11	270	280	270	250	240	240	260	250	230	230	250	260	250	260	260	250	260	240	220	230	240	230	240	260	11		
12	230	250	270	250	230	250	370	260	250	230	240	250	240	240	240	250	240	230	220	220	220	240	250	250	260	12	
	F																										
13	270	260	270	290	270	250	250	230	230	250	260	260	280	250	250	230	230	230	250	250	250	260	260	260	260	13	
14	280	290	260	260	270	250	300	260	240	240	230	250	260	240	250	240	230	230	220	220	230	230	240	260	14		
15	270	250	270	260	250	230	260	250	230	230	240	260	260	250	250	250	240	230	230	220	230	230	240	280	15		
	F	F																									
16	320	320	310	280	240	230	270	250	230	230	240	240	250	250	270	240	230	230	220	220	230	230	240	260	16		
17	260	260	250	250	250	250	240	240	220		250	240	250	250	240	240	230	220	220	220	230	235	250	260	17		
18	270	270	280	260	260	240	260	230	220		U L	U L	240	250	250	250	260	230	230	230	230	240	240	250	18		
19	270	280	300	280	270	260	260	260	220	230	250	250	250	250	240	250	240	240	230	230	230	230	230	240	260	19	
20	270	270	250	250	240	230	250	240	230	230	250	260	260	260	260	260	260	L	L	240	230	230	230	220	250	270	20
21	290	280	270	270	250	230	250	240	220	240	240	240	270	260	250	250	250	230	220	220	220	240	250	270	21		
22	290	270	250	260	240	290	280	250	240	220	230	270	240	280	250	250	240	240	220	230	220	230	240	260	22		
23	270	260	250	260	250	250	260	240	240	240	250	290	270	280	280	250	260	240	210	220	230	230	230	250	250	23	
24	250	260	260	250	240	240	250	240	220	230	240	240	240	250	240	250	240	240	220	210	220	220	230	230	24		
25	310	360	370	400	440	360	360	320	270	250	810	540	420	500	420	L	L	260	260	250	250	240	250	260	25		
26	250	270	280	270	300	300	340	280	250	300	290		U L	260	260	270	240	240	230	230	230	280	260	280	26		
27	280	240	240	230	280	290	270	250	240	240	250	260	250	260	250	260	240	230	220	220	240	250	230	240	27		
28	240	250	250	260	240	260	300	240	230	230	240		L	260	260	280	250	230	240	220	220	270	320	310	260	28	
29	290	290	260	250	280	360	260	270	250		280	27	28	27	27	28	28	24	27	29	29	29	29	29	29	29	29
MED	270	270	270	260	260	250	260	240	230	230	240	250	250	250	250	250	240	230	220	220	230	235	250	260			
NO	29	29	29	29	29	29	29	29	29	29	27	28	27	27	28	28	24	27	29	29	29	29	29	29	29	29	

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 80
IONOSPHERIC DATA

h'F1, Km, February 1956

Station: Washington D.C. Lat. 38.7°N Lang. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

75°W Mean Time
Manual Automatic

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
											230	230	210	205	210	220									01		
											220	220	215	220	220	195	225	230								02	
											225	220	220	220	210	200	185	225	Q	Q						03	
											210	230	215	215	205	205	205	205	220							04	
											220	200	190	190	195	210	205	225								05	
												185	195	185	200	215	210	235	230							06	
												205	200	205	185	215	210	220	220	235						07	
												220	210	200	200	200	200	210	220							08	
												220	215	210	210	210	220	210	220	230						09	
												210	210	200	200	210	210	200	220							10	
												220	210	220	200	230	215	220	225	240						11	
												220	230	210	230	190	200	210	220							12	
												230		220	210	220	220	220	230							13	
												230		220	190	200	210	220								14	
												225	215	210	210	200	200	200	230							15	
												230	210	210	205	220	230	230	230							16	
												225	220	220	215	225	220	230	235							17	
												225	230	205	225	215	220	220								18	
													230	230	220	230	230	230	220							19	
													220	220	215	220	225	230	230							20	
													225	225	215	210	225	225	220	220						21	
													220	215	210	225	225	220	220							22	
													230	225	215	225	210	230	240	230						23	
													220	220	220	210	220	220	220	230						24	
													255	250	235	240	235	235	245							25	
													220	210	210	240	210	210	220	230						26	
													230	220	200	220	220	210	215	200	230					27	
													220	200	205	200	210	220	220	220						28	
													220	210	230	210	220	220	230	230						29	
MED														220	220	215	210	210	220	220	230						
NO														3	21	27	29	29	29	29	29	25	3				

TABLE 81
IONOSPHERIC DATA

29

$h^{\circ}E$, Km, February 1956

Station: Washington D.C. Lat 38.7°N Long 77.1°W. Sweep I.O Mc to 25.0 Mc in 13.5 sec. 75°W Mean Time

Manual Automatic

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
									U S	A	115	119	119	101	105	105	111	S												
									121															01						
									A	A	A	A	A	101	A	105	A	121							02					
									A	H	A	A	A	A		105	UA							03						
									109							105	109	113	117						04					
									A		A	A		UA				A							05					
									101				105	119	111	109	113								06					
									A	U A				A	A	A	A	A							07					
									101	101	107														08					
									111	109	109	101	107	107	101	101	111	S							09					
									A	H	U A	H				UA									10					
									101	111	101	105	105	105	109	109	111	129							11					
									A	109	109	109	109	109	109	109	111	127							12					
									119	109	109	109	109	109	111	111	111	121							13					
									A	A							H								14					
									121	115				118	109	109	109	109	125							15				
									H	H	U A	H				H	H								16					
									121	119	119	101	109	101	101	111	111	115							17					
									H	I B							A								18					
									109	105	103	101	101	109	111	105	105	111							19					
									H					H	H										20					
									109	103	101	101	101	101	105	105	109	109	135							21				
									H	H	U A	U A					U A								22					
									119	119	119	105	105	103	105	105	109	111	121							23				
									B	B				115	115	111	109	105	B							24				
									E S						H	U A									25					
									147	115	109	105	105	105	105	105	101	115	120							26				
									S						U A											27				
									109	105	109	105	105	109	109	109	109	109	119							28				
									H	H						U A										29				
									111	101	101	105	103	101	101	101	105	105	119							30				
									U S																	31				
									163	109				109	111	111	111	111	115	117								32		
									E S	I A				132	107	103	101	101	113	111	107	109	117						33	
									157																	34				
									109	109	105	109	101	101	109	109	109	113	119	129							35			
									123	107	103	101	103	111	119	107	109	111	123	117							36			
									109	103	103	101	101	105	105	109	107	115	119	S							37			
									A	A	A	A	A	A	A	A	A	115							38					
									129	H				111	107	105	105	107	109	107	109	113	C						39	
MED														111	107	105	105	107	109	108	109	111	121							
NO										2	21	24	23	23	25	26	26	27	26	22	2									

TABLE 82
IONOSPHERIC DATA

(M3000)F2, February 1956

75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N. Long. 77.1°W. Sweep I.O Mc to 25.0 Mc in 13.5 sec. Manual Automatic

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
01	270	290	310	330	285	280	280	310	360	340	340	330	320	325	330	325	330	340	320	315	310	290	310	310			
					U F	U F																		01			
02	300	280	310	310	290	280	320	330	340	345	335	330	330	335	330	340	340	325	340	315	325	315	310	320			
	F	U F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	02			
03	300	310	295	305	290	320	330	330	345	345	340	340	320	340	320	320	320	330	330	320	310	300	320	310	03		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	04			
04	340	315	285	300	305	330	340	330	360	330	360	330	340	340	330	315	325	320	320	325	330	335	320	300	04		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	05			
05	320	290	310	300	310	320	340	310	360	360	340	335	340	330	330	340	335	320	310	325	315	340	335	310	05		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	06			
06	330	315	305	300	300	310	300	330	360	365	370	320	340	340	320	310	340	340	350	310	325	330	325	310	06		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	07			
07	295	310	310	310	310	320	320	330	360	360	350	360	320	320	335	340	340	330	320	310	330	330	320	300	07		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	08			
08	310	310	290	300	310	310	310	330	360	345	325	330	320	320	340	320	330	330	330	330	320	330	310	300	08		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	09			
09	290	290	290	300	290	300	300	330	360	360	355	340	325	325	325	310	320	335	330	330	340	330	310	310	09		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	10			
10	310	300	310	300	300	320	300	330	365	370	340	350	330	310	330	320	330	330	320	310	290	300	280		11		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	11			
11	290	295	290	310	320	290	300	310	350	340	330	320	310	315	310	310	310	320	305	305	310	305	300	290		12	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	12			
12	300	280	290	305	320	300	280	320	330	350	320	340	340	310	320	320	330	330	330	320	300	305	300	300		13	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	13			
13	300	300	290	290	290	290	290	330	340	330	320	320	310	320	320	320	320	330	330	320	300	320	330	300		14	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	14			
14	300	300	310	300	290	320	290	320	330	340	330	350	330	335	340	310	320	320	330	310	320	315	310	300		15	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	15			
15	300	310	310	310	310	340	310	330	345	330	325	335	320	320	320	320	320	310	315	320	320	310	290		16		
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	16			
16	290	280	270	290	310	320	300	310	340	320	330	310	310	310	300	310	305	320	320	315	320	300	295	295		17	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	17			
17	285	295	300	300	300	300	310	320	345	330	310	310	310	310	310	305	305	305	320	310	315	315	300	300		18	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	18			
18	285	290	270	280	290	300	285	320	350	325	320	300	330	300	300	305	310	310	310	310	310	310	300	310		19	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	19			
19	290	280	265	275	275	290	280	290	300	330	320	320	325	305	310	300	310	315	320	310	305	320	320	300	300		20
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	20			
20	300	290	300	300	310	310	300	330	350	330	320	310	310	300	305	295	310	305	305	310	320	300	290	285		21	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	21			
21	275	275	285	290	300	310	300	320	330	335	325	310	310	300	300	300	305	305	300	305	300	300	300	280		22	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	22			
22	275	275	285	280	290	260	270	310	330	330	320	315	305	310	300	300	310	315	305	310	305	310	280			22	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	22			
23	280	290	290	290	300	290	290	320	340	345	335	325	315	300	300	300	300	325	320	320	300	310	305	300		23	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	23			
24	300	295	290	305	310	305	310	325	320	325	325	315	310	310	305	305	310	315	320	310	310	305	315	310		24	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	24			
25	280	280	265	260	255	265	255	275	285	290	205	240	270	245	265	270	280	280	290	300	290	320	290	290		25	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	25			
26	290	300	300	320	310	300	290	300	320	300	315	305	310	315	325	305	305	305	305	305	305	305	300	315	285		26
	F	S	S	F	F	F	F	F	F	F	U S	U S	U S	U S	U S	U S	U S	U S	U S	U S	U S	U S	U S	F	26		
27	280	295	300	265	305	285	330	335	340	325	325	320	325	320	320	320	320	315	310	300	315	305	320	300		27	
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	27			
28	300	300	290	295	310	305	280	330	320	335	310	320	320	310	305	310	310	320	330	320	320	280	255	260	290		28
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	28			
29	280	275	275	300	310	270	350	300	320	320	310	310	290	300	300	300	300	310	310	300	300	300	280	300	290		29
	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	29			
MED	295	295	290	300	300	305	300	320	340	335	325	320	320	315	320	310	320	320	320	310	315	310	310	300			
NO	29	29	28	29	29	29	28	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	28	

TABLE 83
IONOSPHERIC DATA

31

(M3000) FI, February 1956

75° W Mean Time

Station: Washington D.C. Lat 38.7°N. Long 77.1°W Sweep I.O Mc to 25.0 Mc in 13.5 sec. Manual Automatic

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
01									Q	Q	L	L	L	L	L	L	Q											
02									Q	L	U	A	L	U	A	L	L	L	L	Q								
03									L	H	L	L	U	A	U	H	L	Q	Q									
04									Q	H	L	L	L	L	H	H	H	L	Q									
05									Q	L	L	L	L	L	L	L	L	L	L	Q								
06									Q	Q	H	H	H	380	L	L	L	L	L									
07									Q	H	H	H	L	L	L	H	L	L										
08									Q	L	L	L	L	H	H	L	L	Q										
09									Q	L	L	L	L	L	L	L	L	L	L									
10									Q	L	L	L	410	L	L	L	400	L	Q									
11									L	L	L	L	L	L	L	L	L	L	Q									
12									Q	L	L	L	L	L	L	L	L	L	Q									
13									Q	L	B	L	L	L	L	L	L	L	Q									
14									Q	L	L	L	L	L	L	L	400	L	Q	Q								
15									Q	Q	L	L	L	L	L	L	L	L	Q									
16									Q	Q	L	L	L	L	L	L	L	L	Q									
17									Q	L	L	L	L	L	L	L	L	L	Q									
18									Q	L	L	L	L	L	L	L	L	Q	Q									
19									Q	Q	B	L	L	L	L	L	L	L	Q									
20									Q	Q	Q	L	L	L	L	L	L	L	Q									
21									Q	Q	L	L	L	L	L	L	L	L	Q									
22									Q	Q	L	L	L	L	L	L	L	L	Q									
23									Q	Q	L	L	L	L	L	L	L	L	Q									
24									Q	Q	L	L	L	L	L	L	L	L	Q									
25									Q	Q	335	325	340	330	330	L	L	Q	Q									
26									Q	Q	L	H	L	U	S	L	I	L	L	Q	Q							
27									Q	L	L	L	L	L	L	L	L	L	Q	Q								
28									Q	Q	L	L	L	L	L	L	L	L	Q									
29									Q	Q	L	L	L	L	L	L	L	L	Q									
MED																												
NO																	1	1	3	1	3	1						

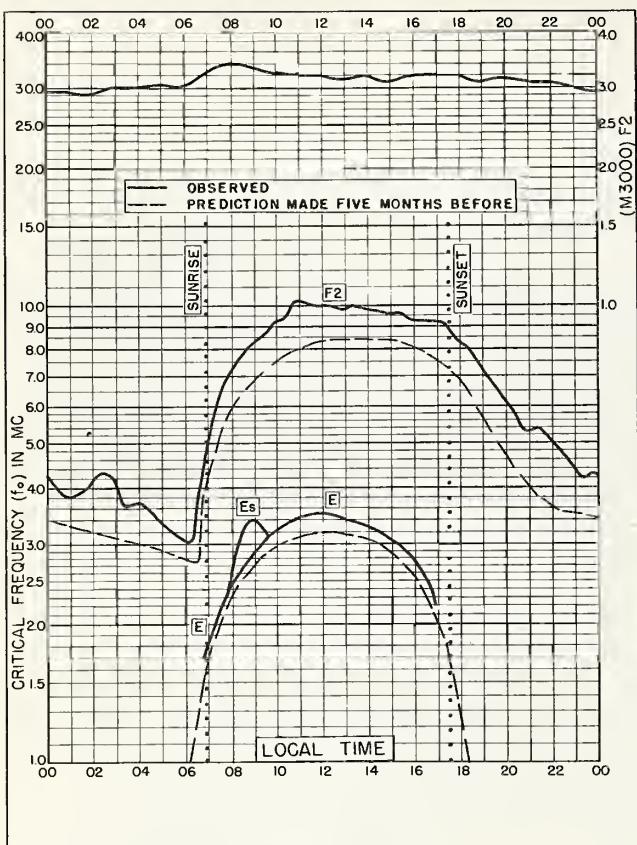


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W FEBRUARY 1956

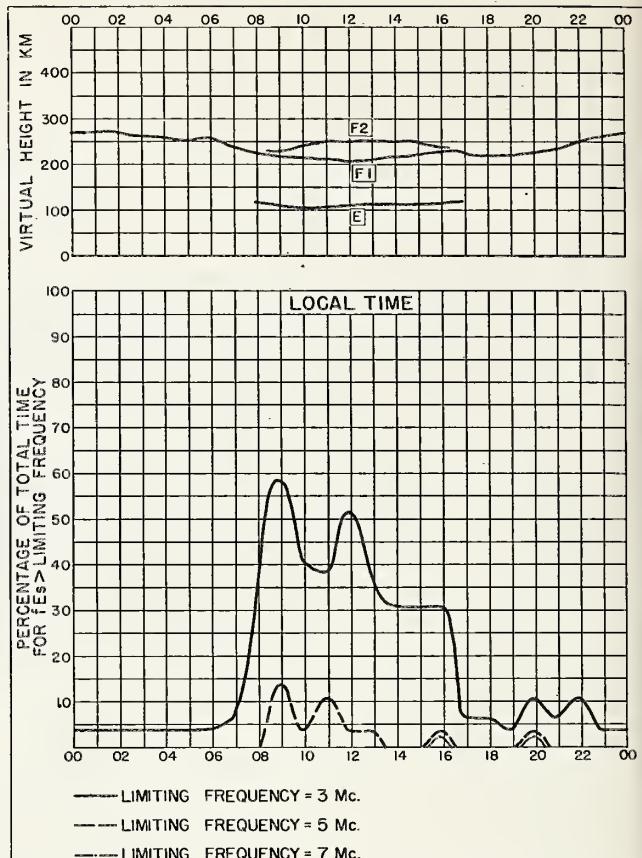


Fig. 2. WASHINGTON, D. C. FEBRUARY 1956

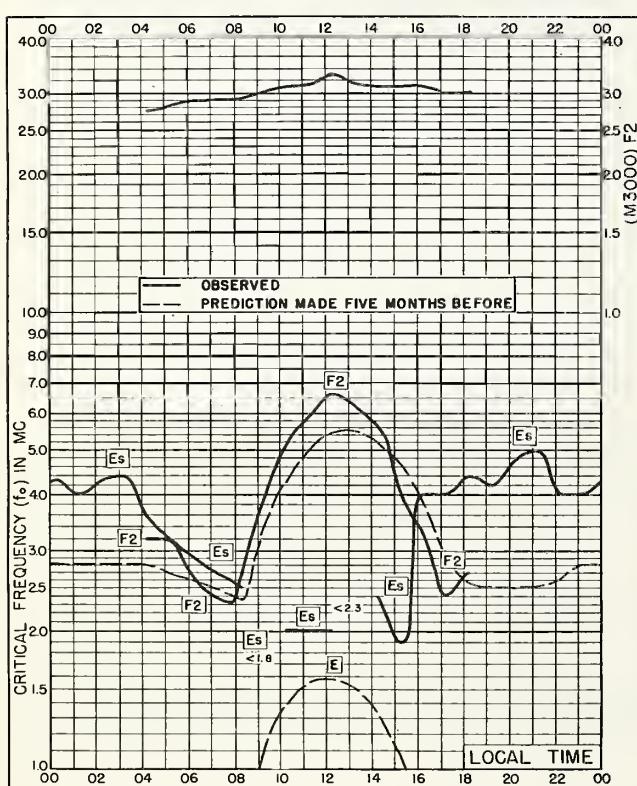


Fig. 3. TROMSO, NORWAY
69.7°N, 19.0°E JANUARY 1956

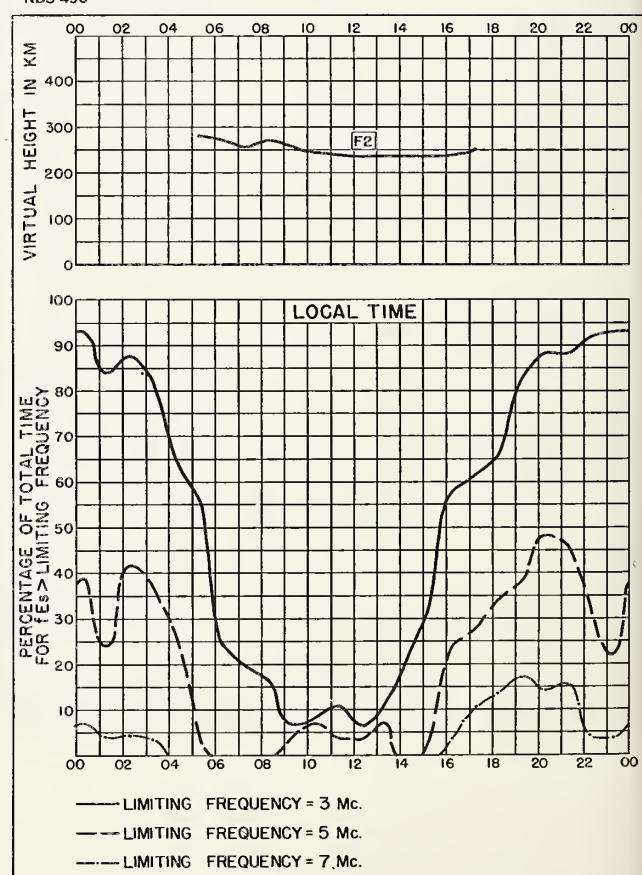
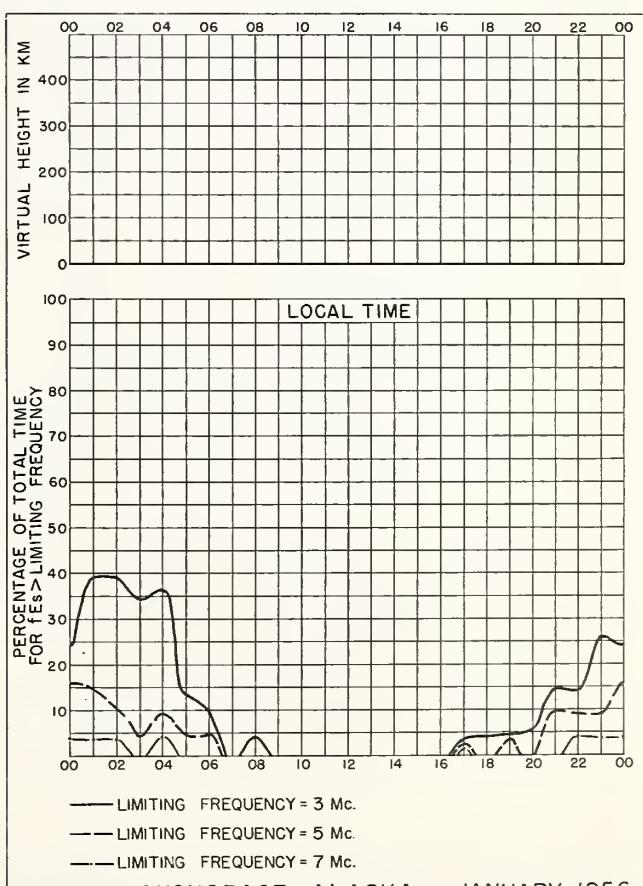
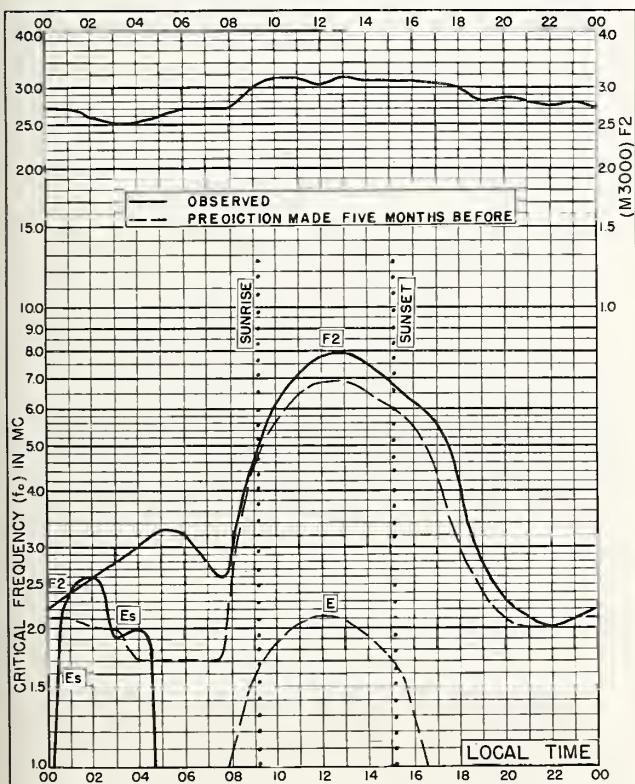
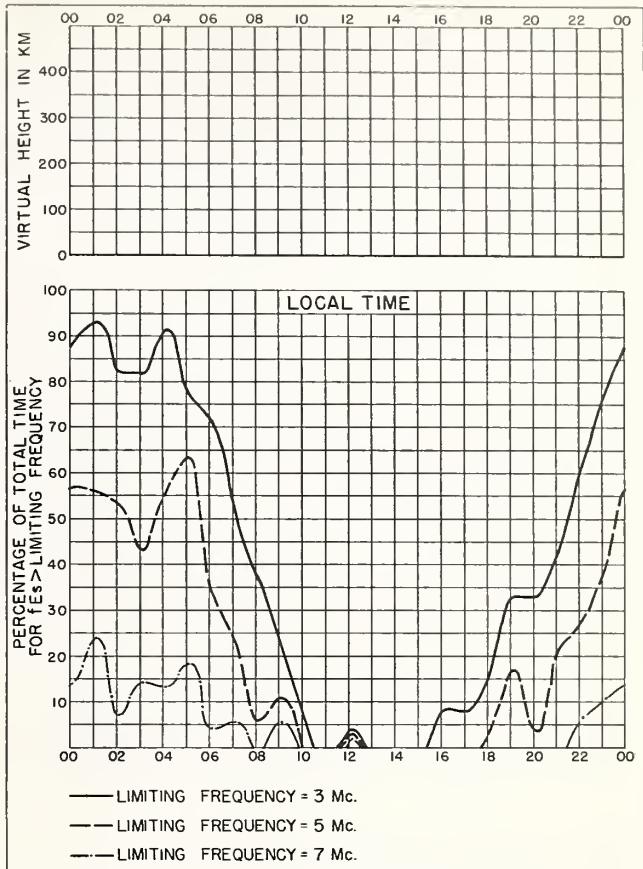
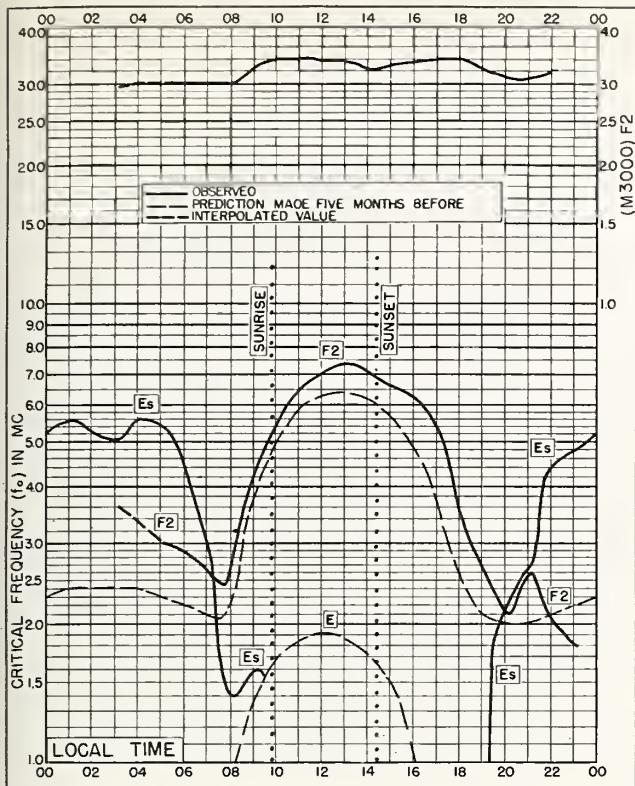
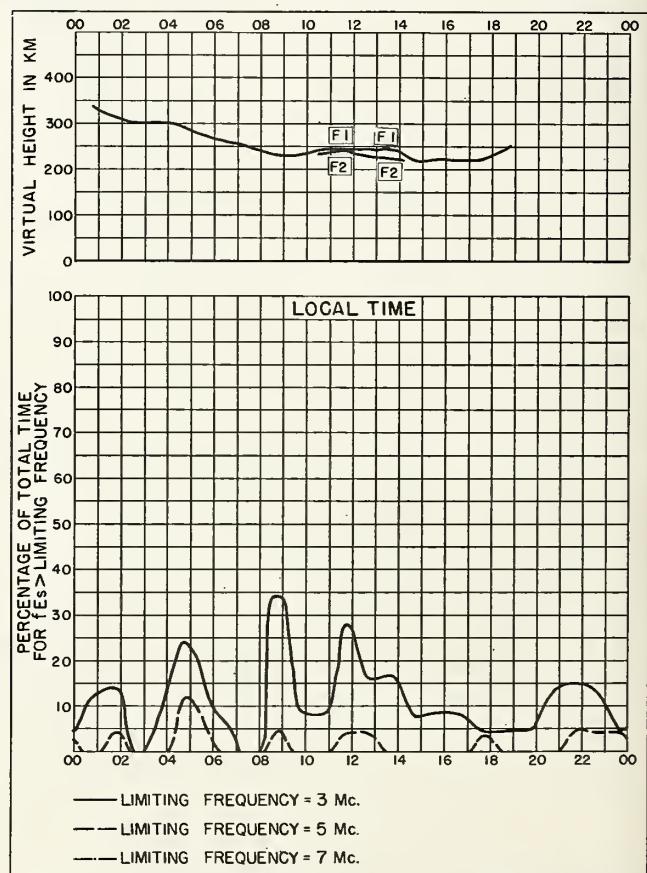
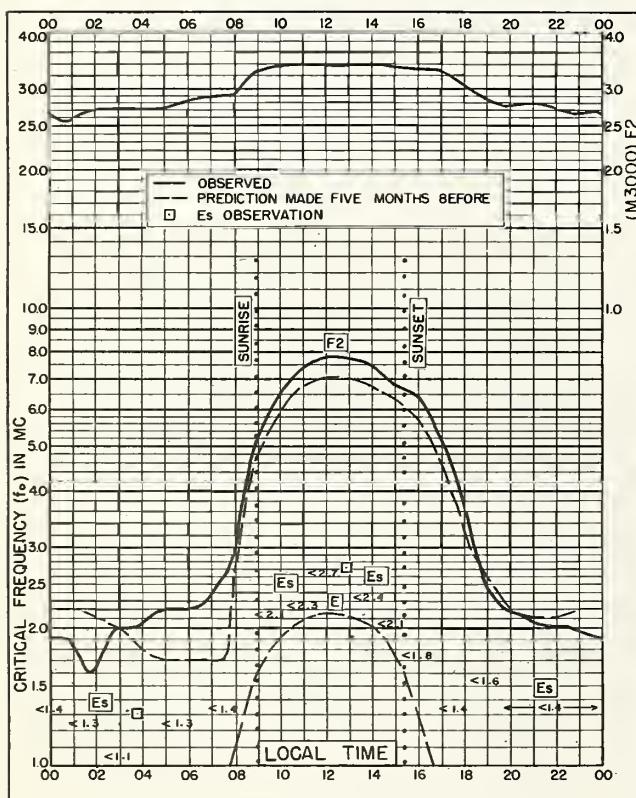
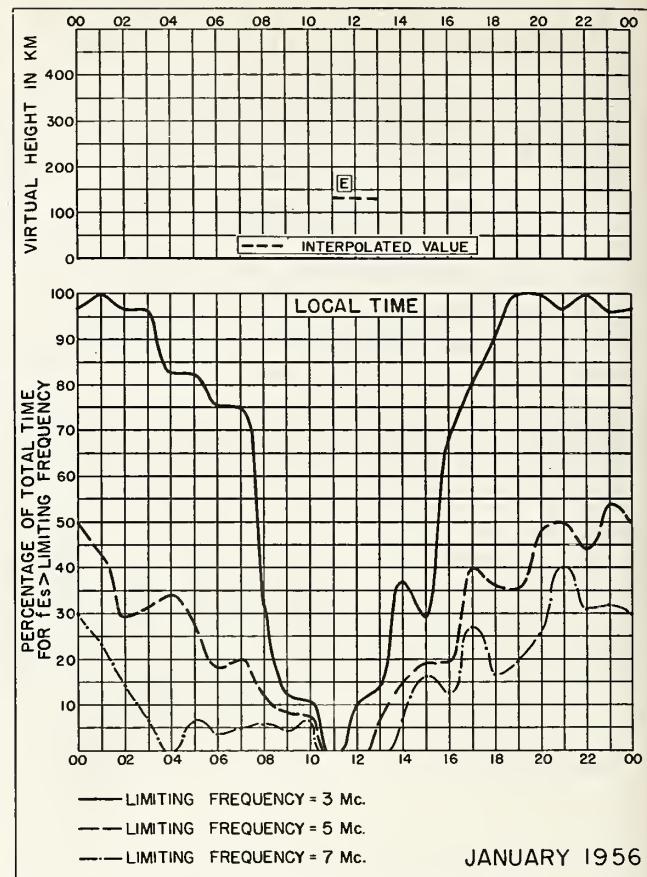
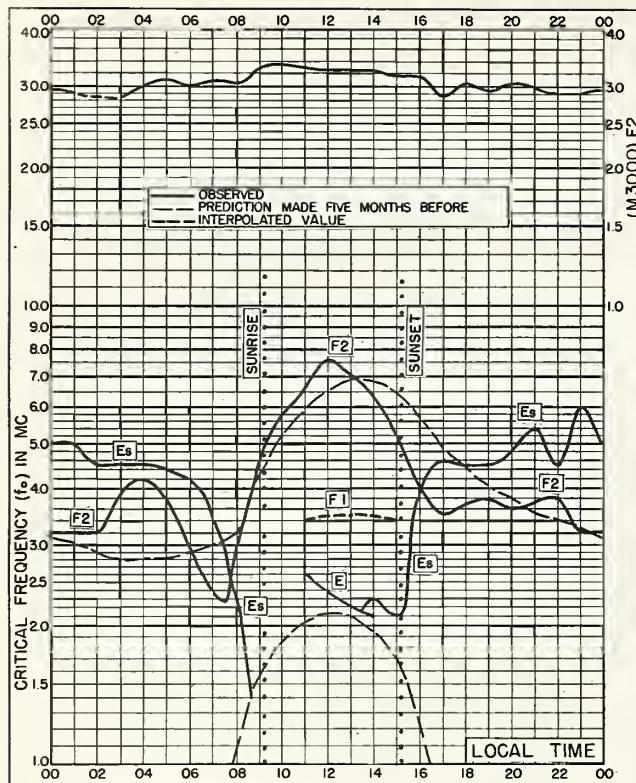
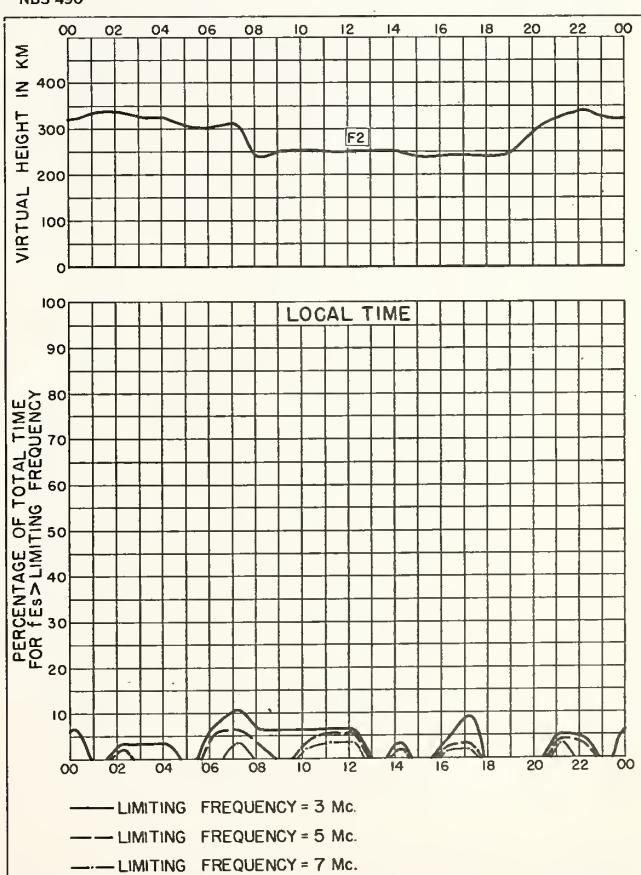
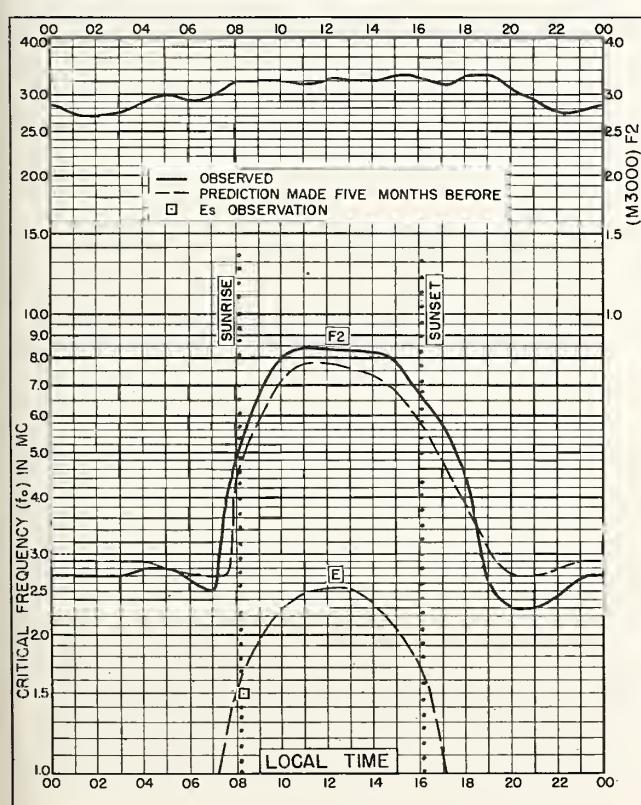
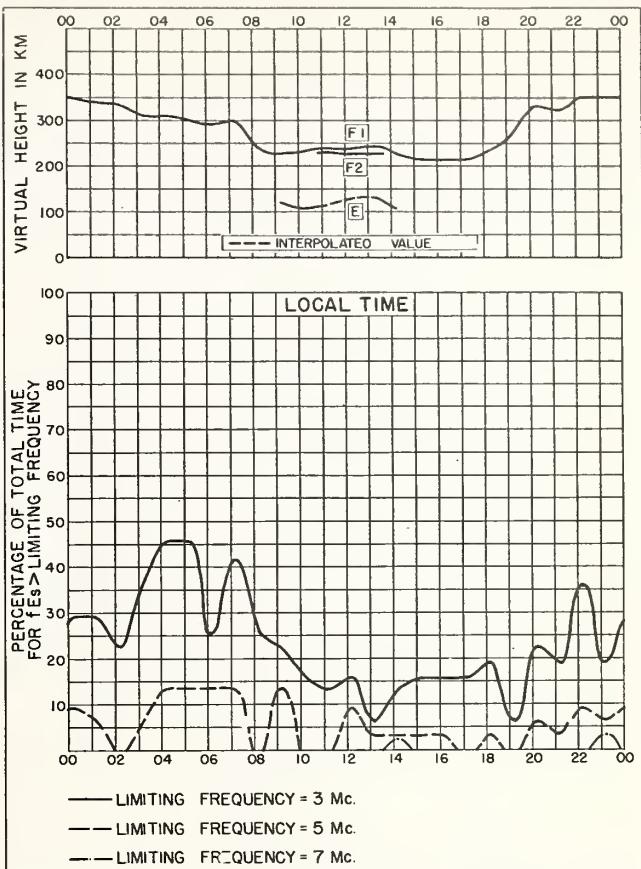
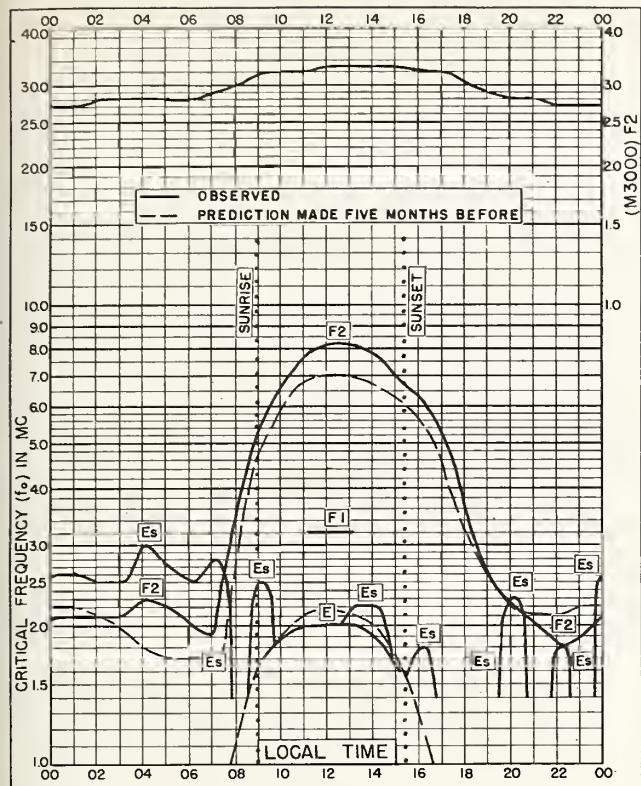


Fig. 4. TROMSO, NORWAY JANUARY 1956







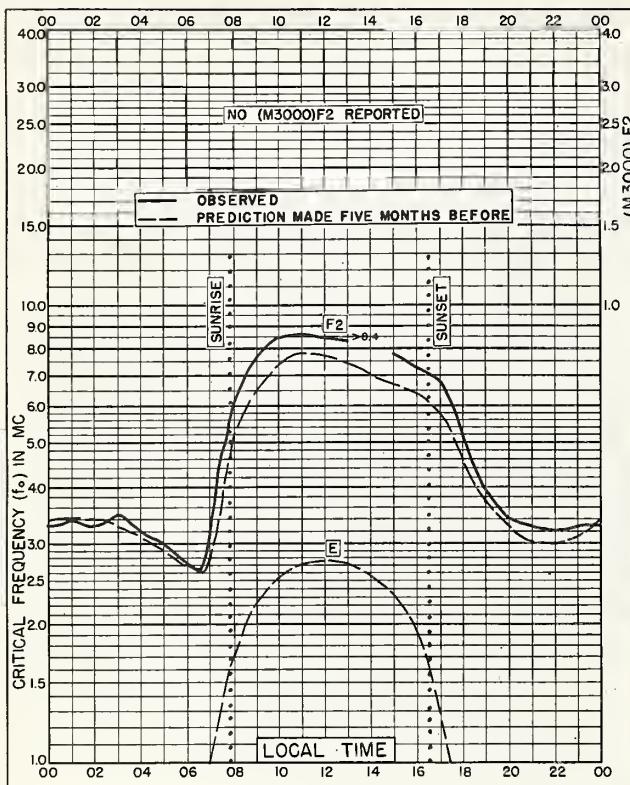


Fig. 17. GRAZ, AUSTRIA
47.1°N, 15.5°E JANUARY 1956

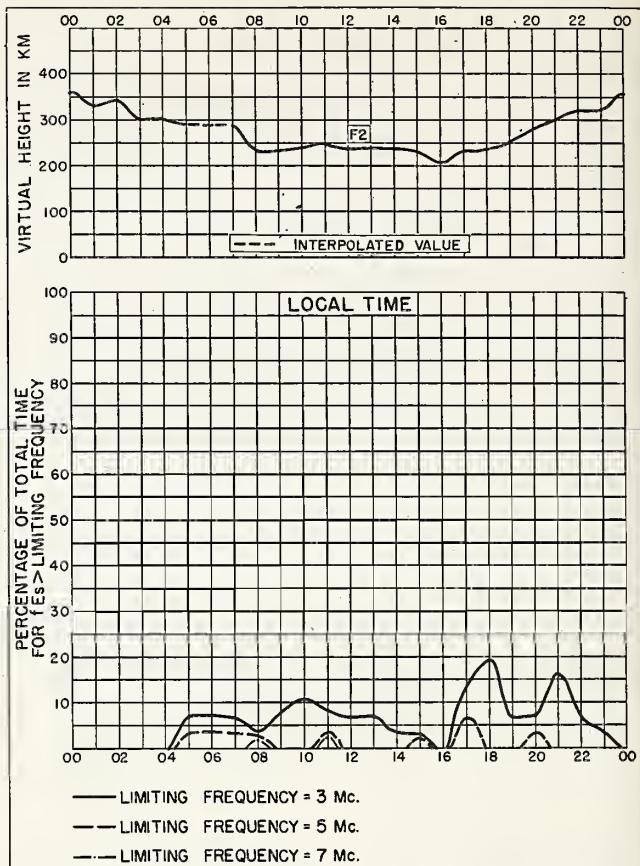


Fig. 18. GRAZ, AUSTRIA JANUARY 1956

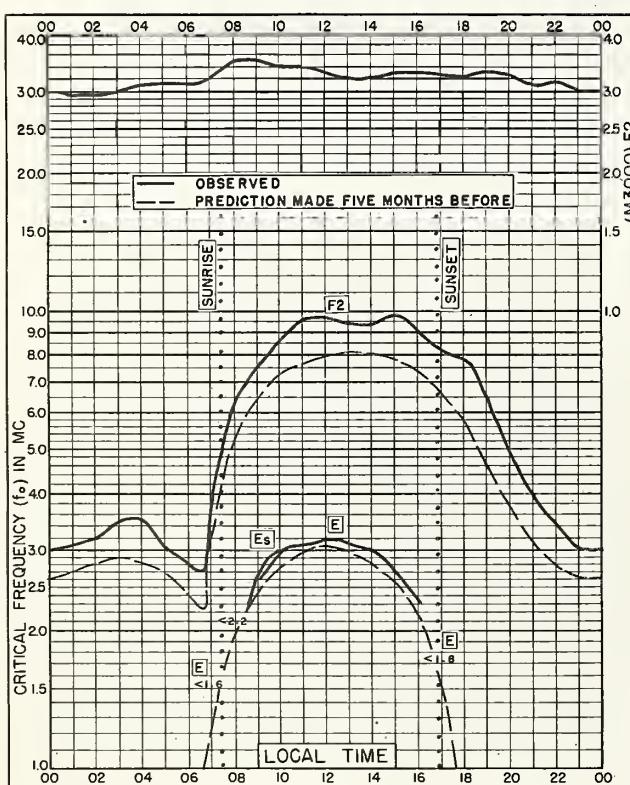


Fig. 19. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W JANUARY 1956

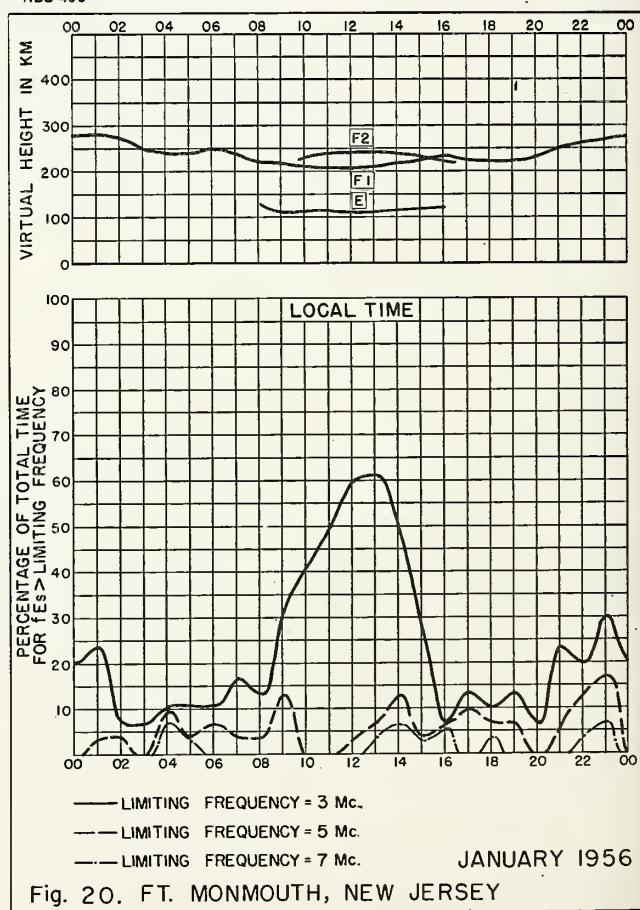
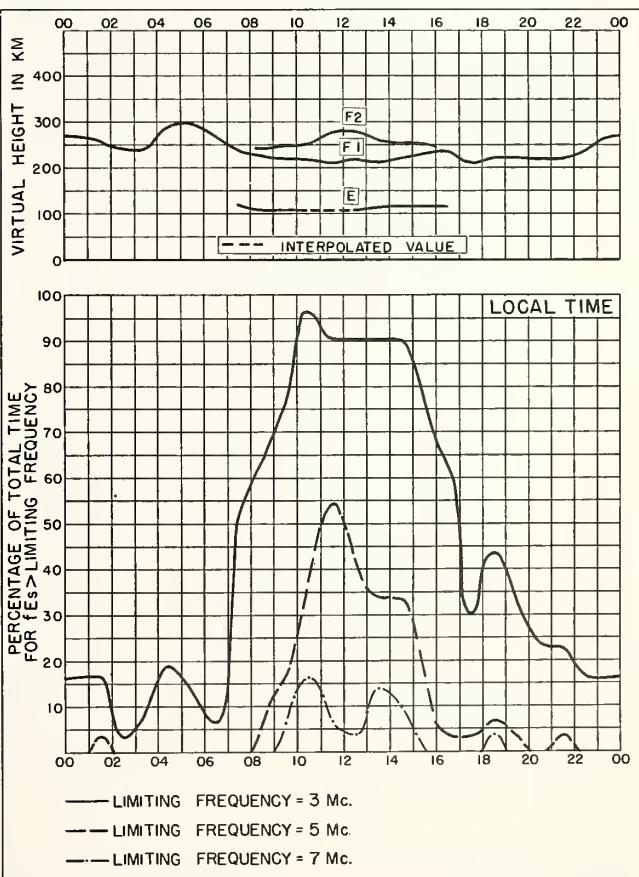
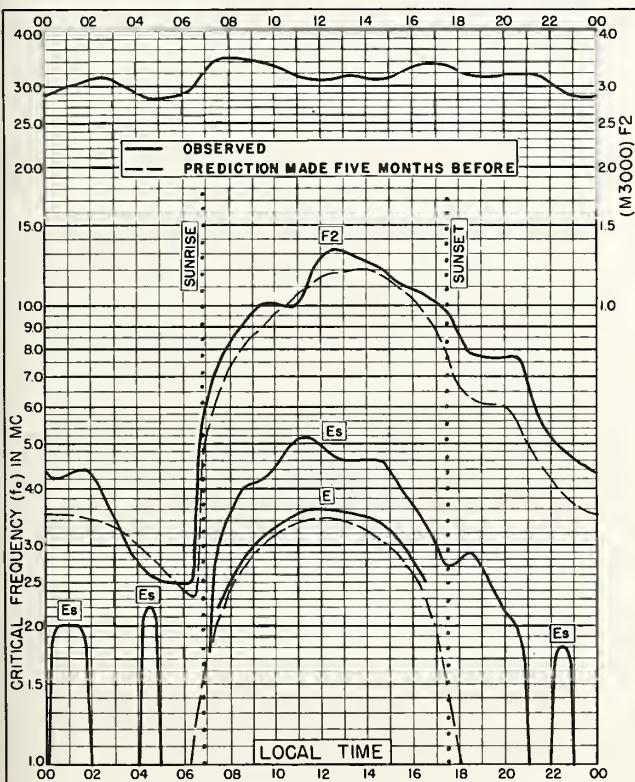
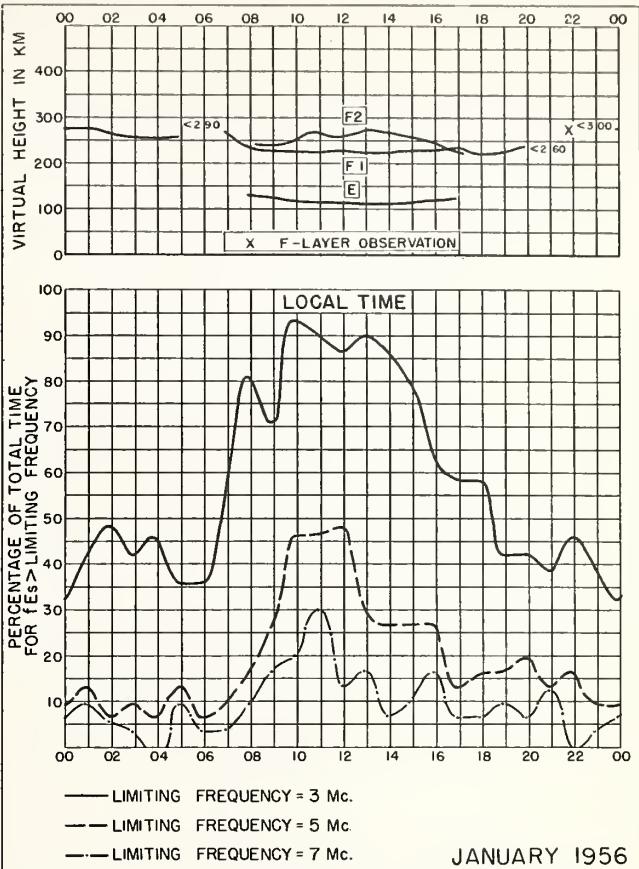
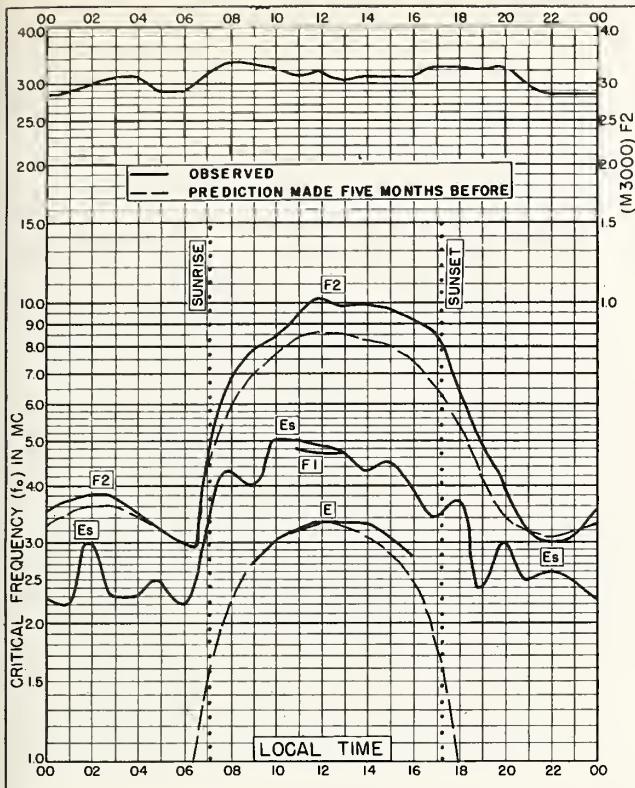


Fig. 20. FT. MONMOUTH, NEW JERSEY JANUARY 1956



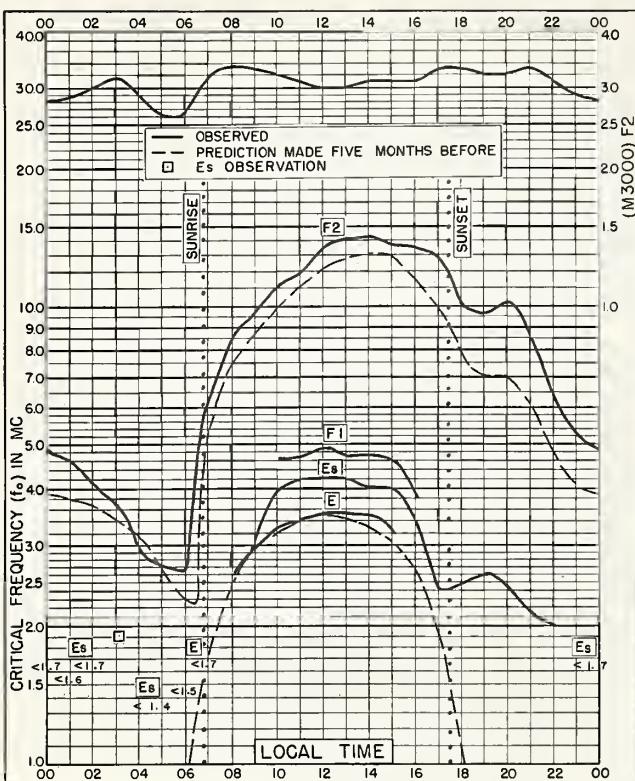


Fig. 25. FORMOSA, CHINA
25.0°N, 121.5°E JANUARY 1956

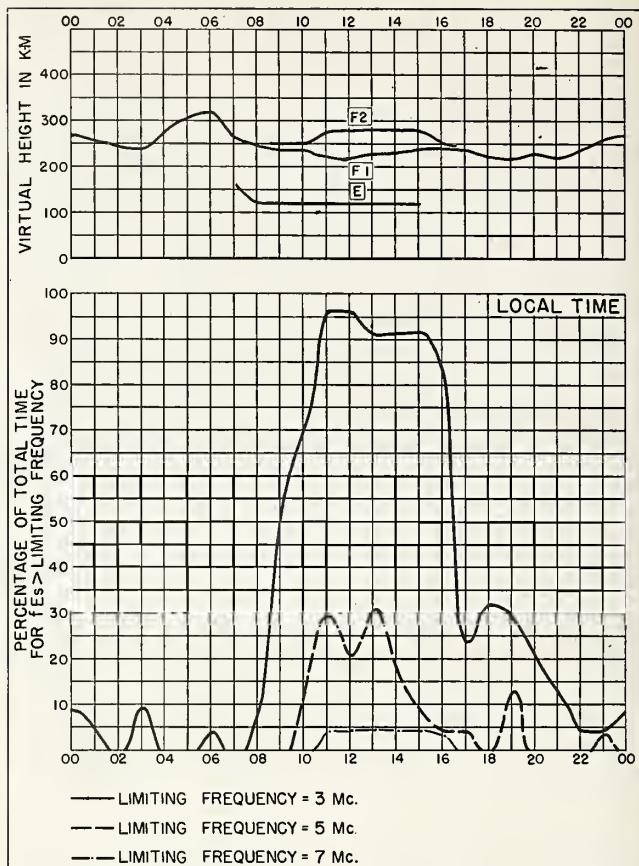


Fig. 26. FORMOSA, CHINA JANUARY 1956

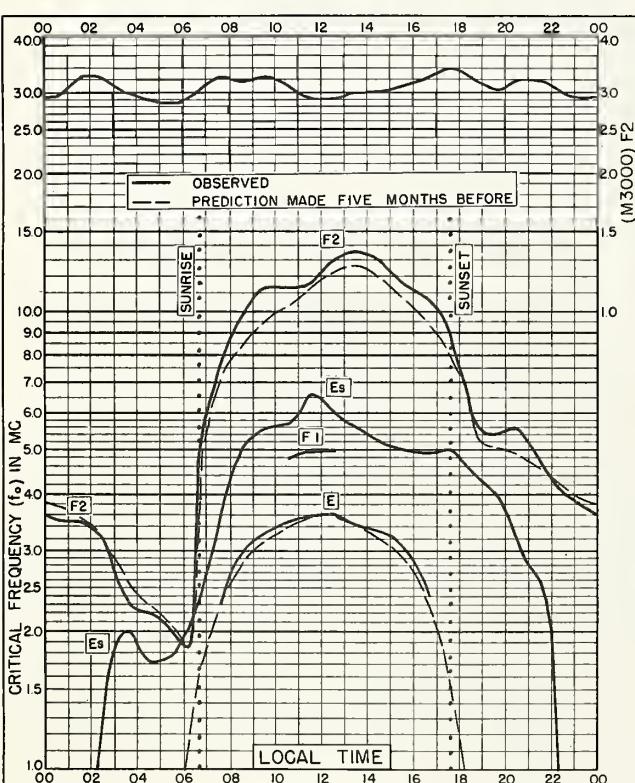


Fig. 27. MAUI, HAWAII
20.8°N, 156.5°W JANUARY 1956

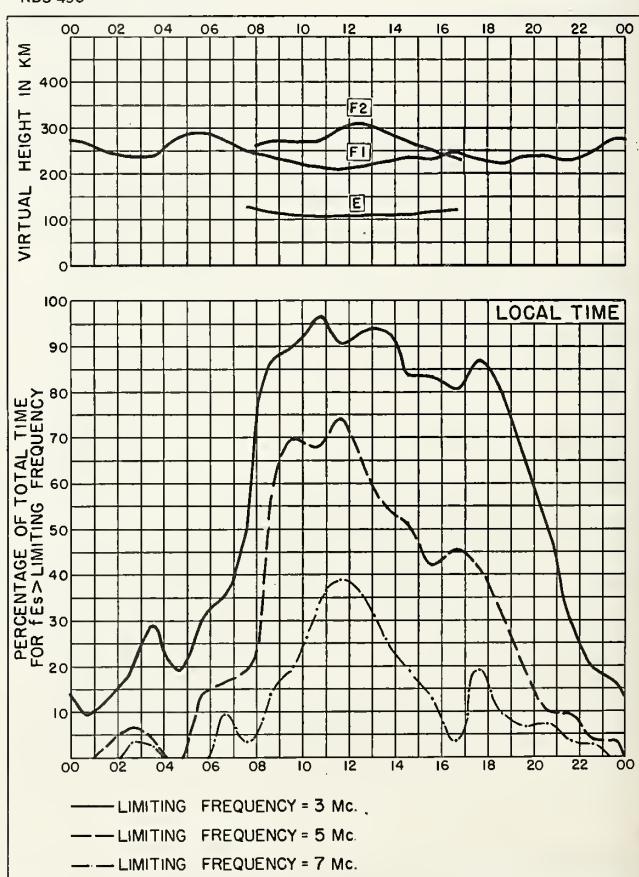


Fig. 28. MAUI, HAWAII JANUARY 1956

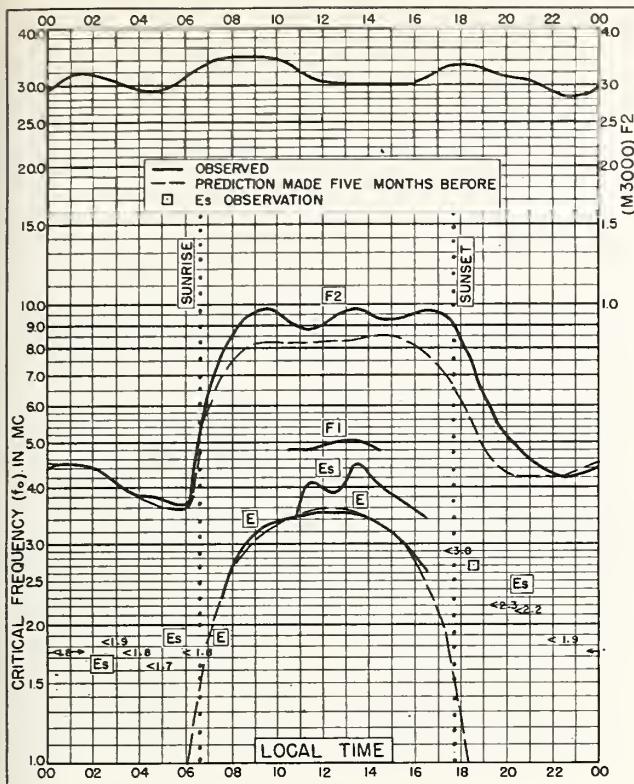


Fig. 29. PUERTO RICO, W. I.
18.5°N, 67.2°W JANUARY 1956

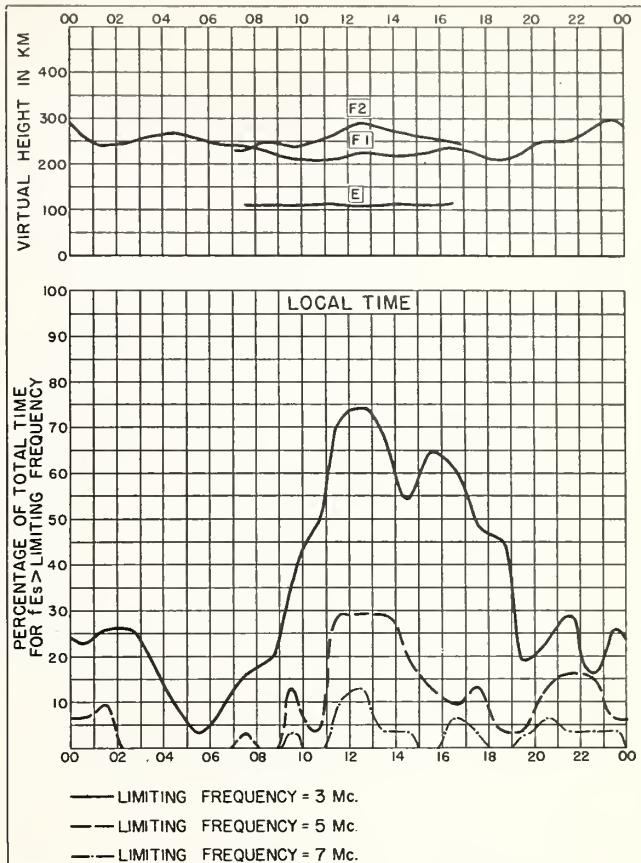


Fig. 30. PUERTO RICO, W. I. JANUARY 1956

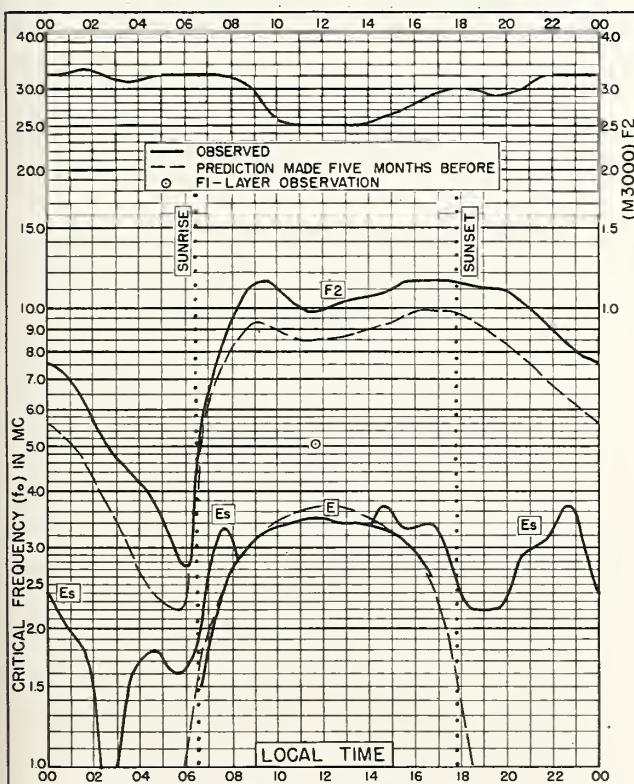


Fig. 31. GUAM I.
13.6°N, 144.9°E JANUARY 1956

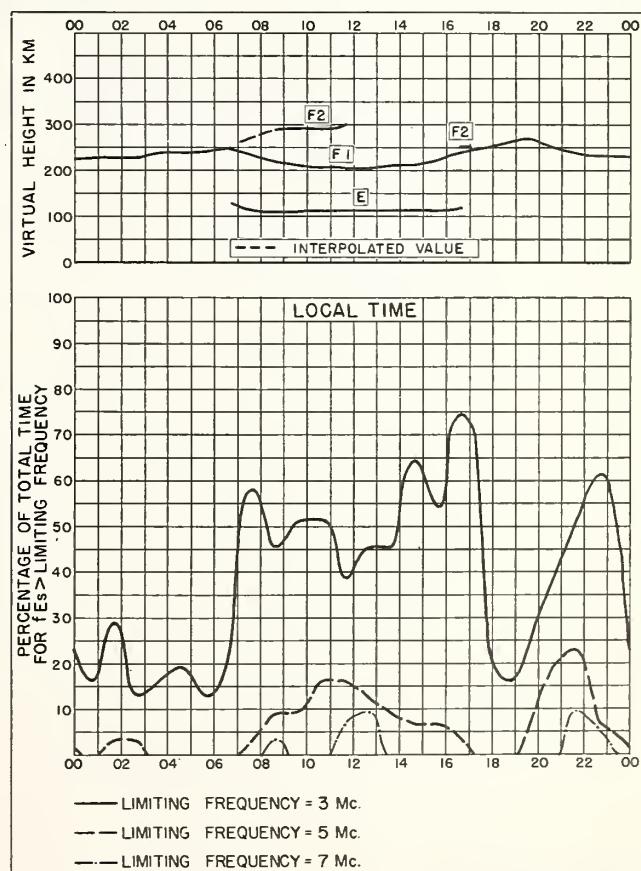
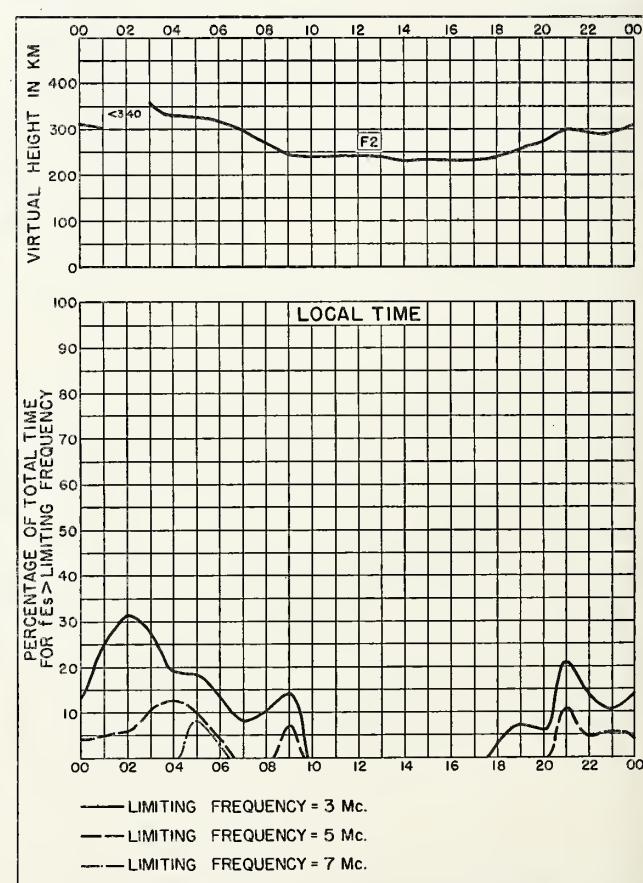
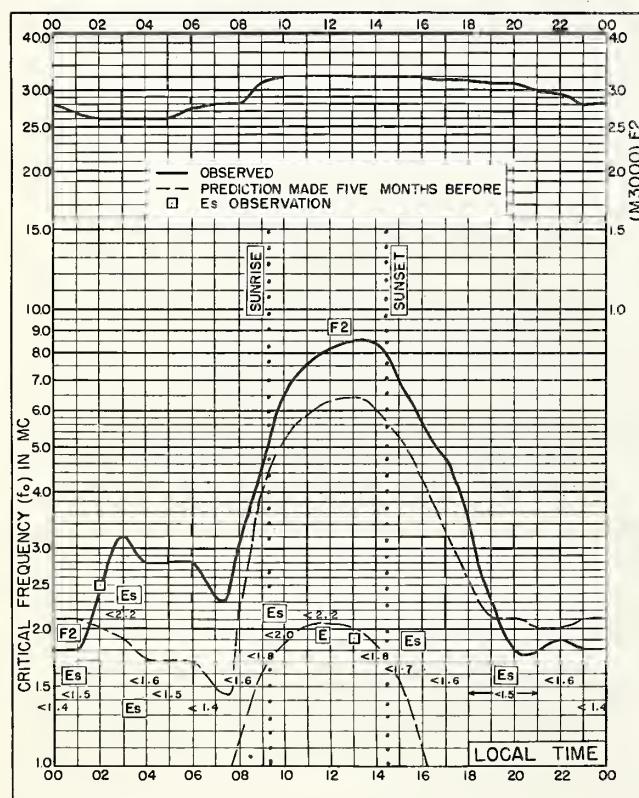
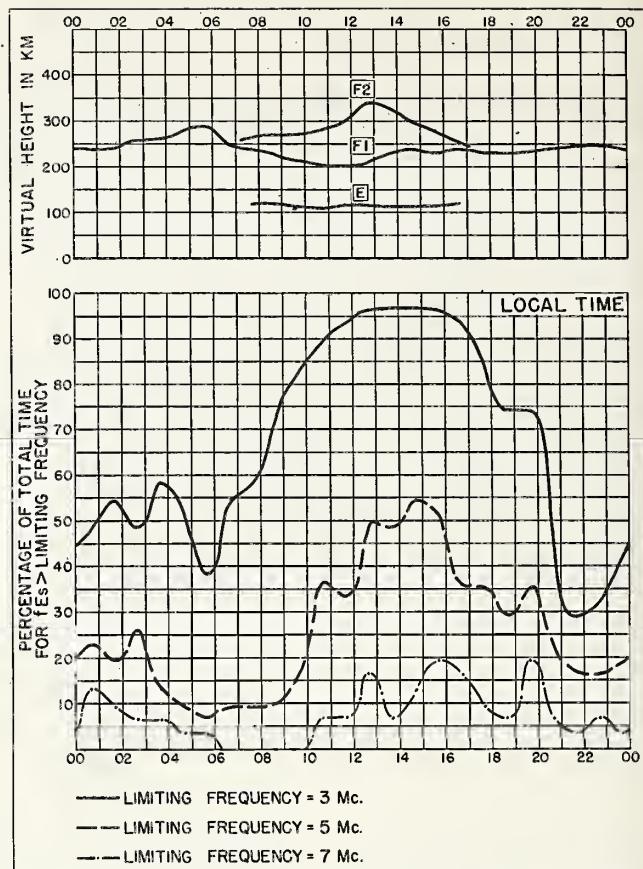
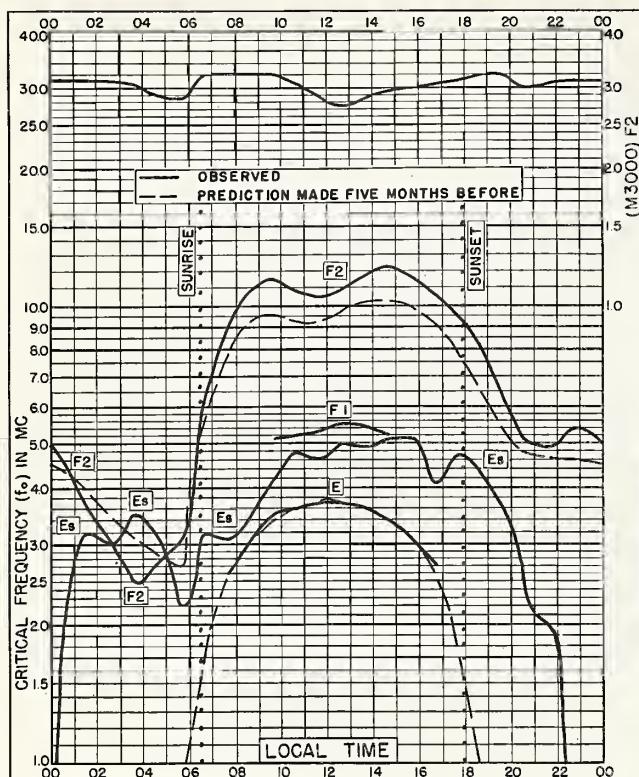


Fig. 32. GUAM I. JANUARY 1956

NBS 490



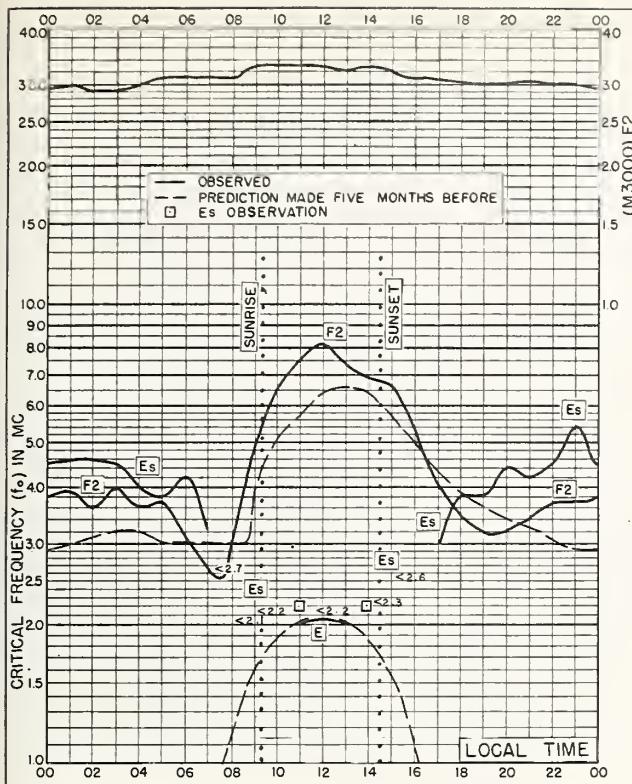


Fig. 37. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W DECEMBER 1955

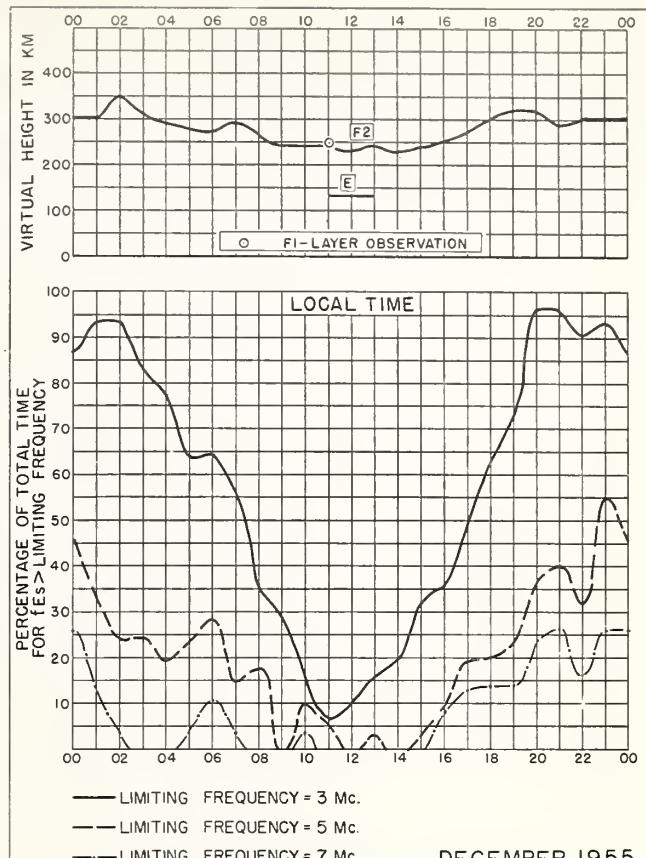


Fig. 38. NARSARSSUAK, GREENLAND

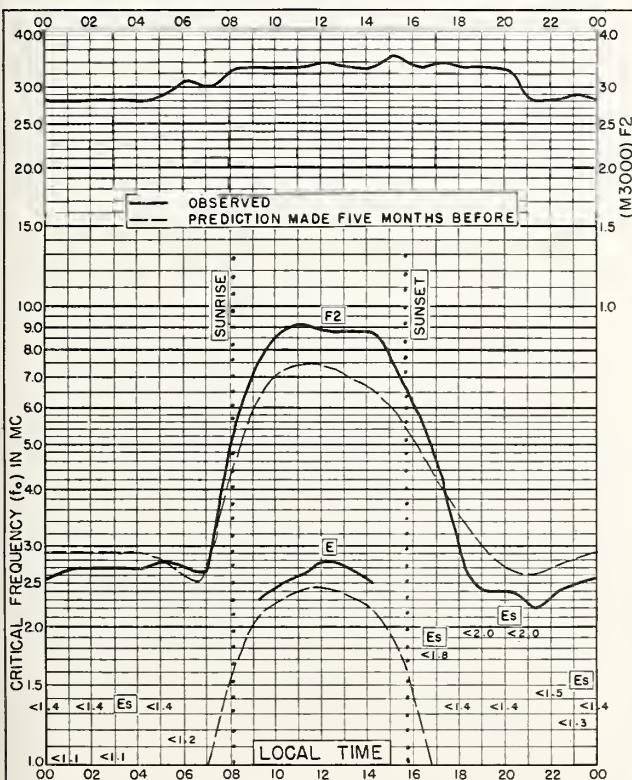
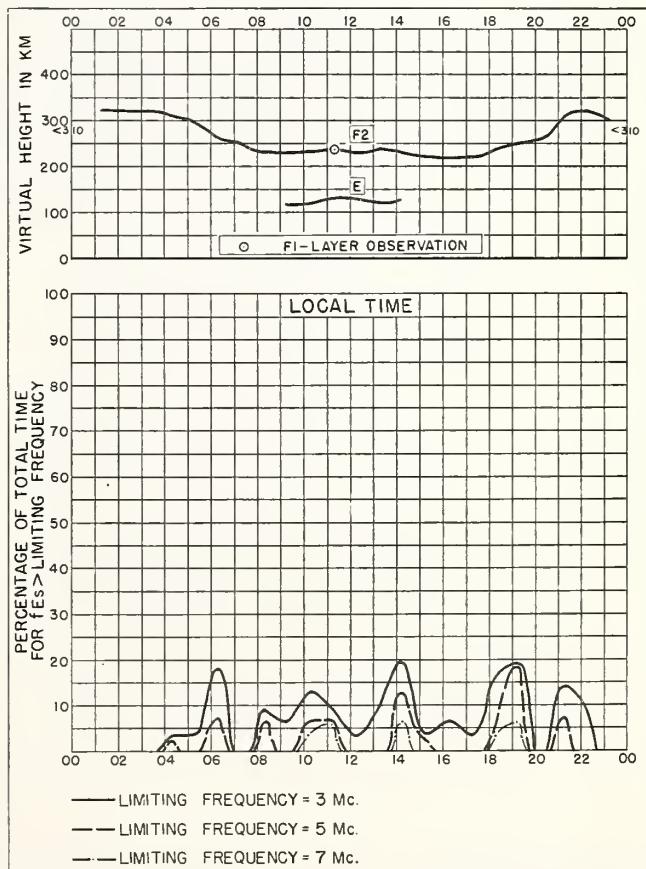


Fig. 39. ADAK, ALASKA
51.9°N, 176.6°W DECEMBER 1955



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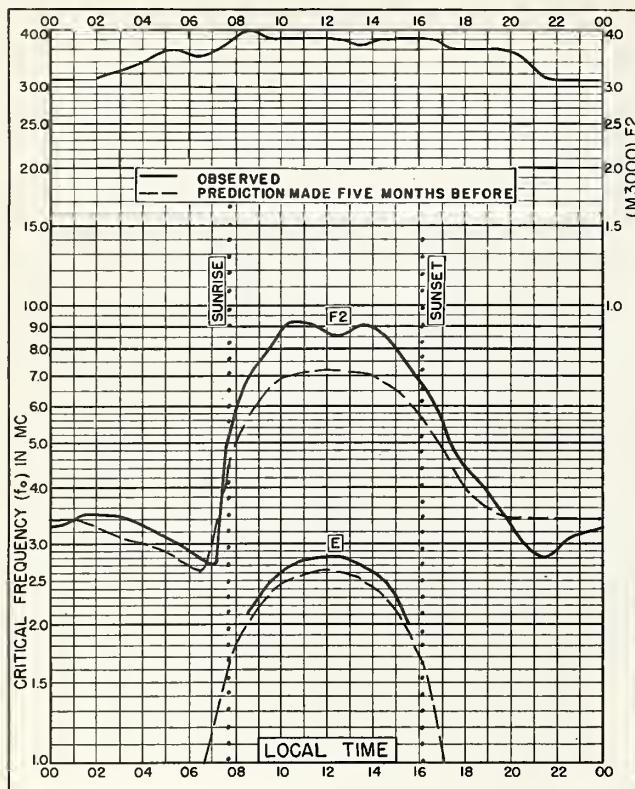


Fig. 41. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E DECEMBER 1955

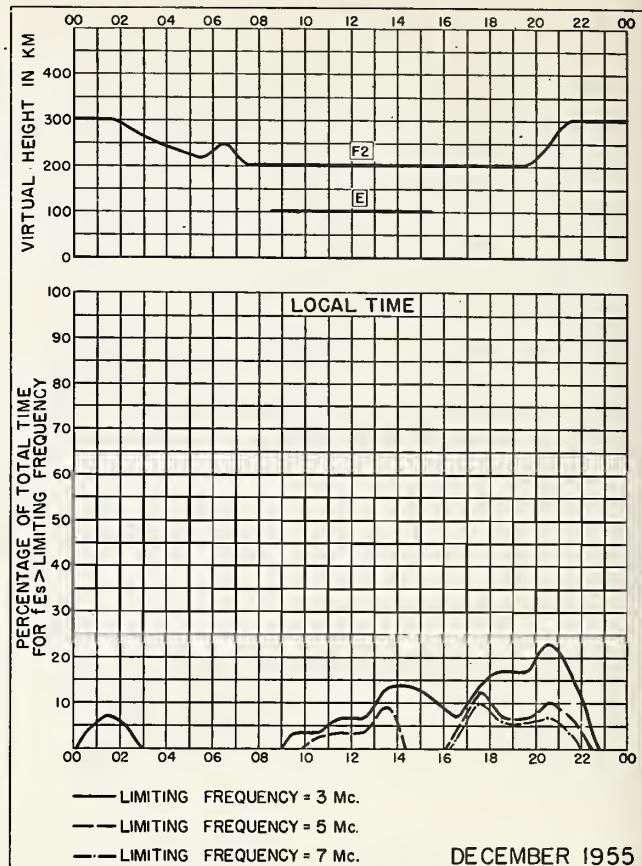


Fig. 42. SCHWARZENBURG, SWITZERLAND

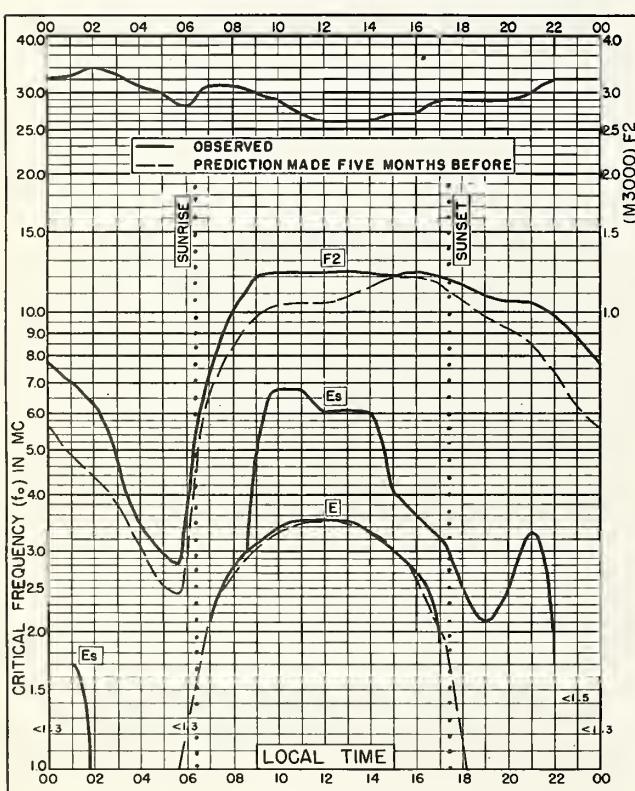


Fig. 43. BAGUIO, P. I.
16.4°N, 120.6°E DECEMBER 1955

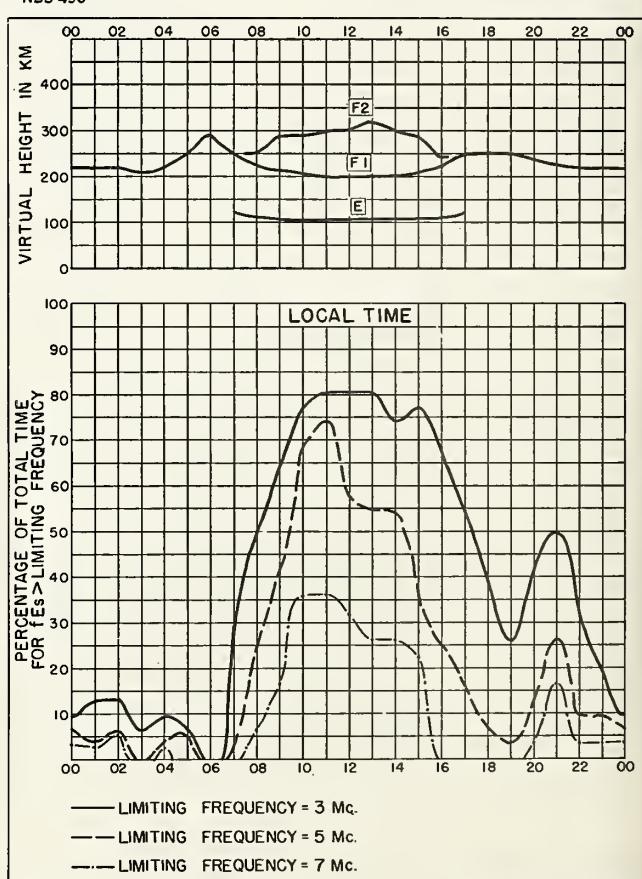


Fig. 44. BAGUIO, P. I. DECEMBER 1955

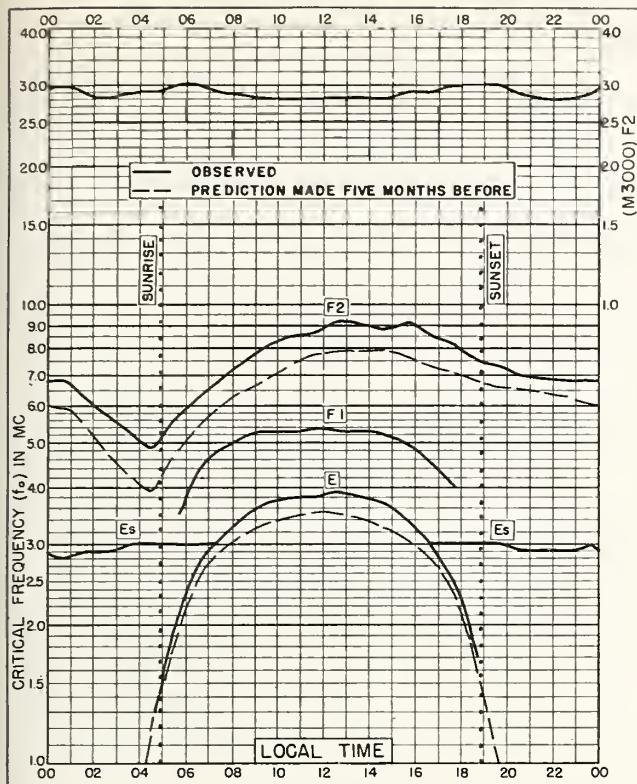


Fig. 45. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E DECEMBER 1955

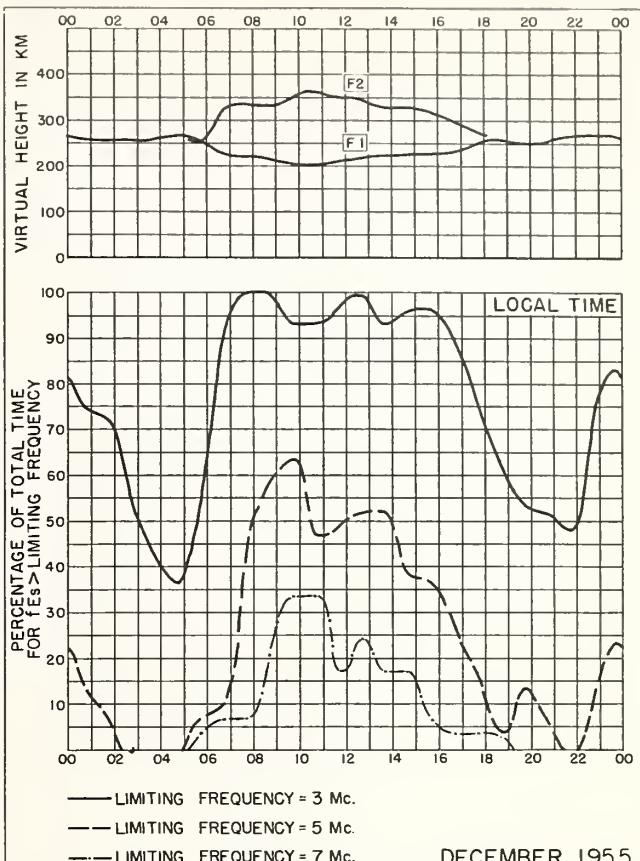


Fig. 46. WATHEROO, W. AUSTRALIA

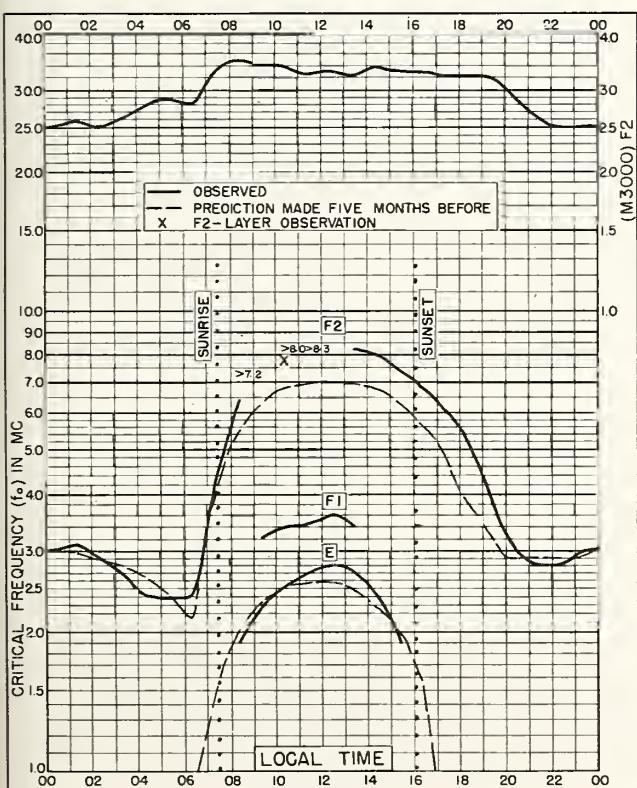


Fig. 47. De BILT, HOLLAND
52.1°N, 5.2°E NOVEMBER 1955

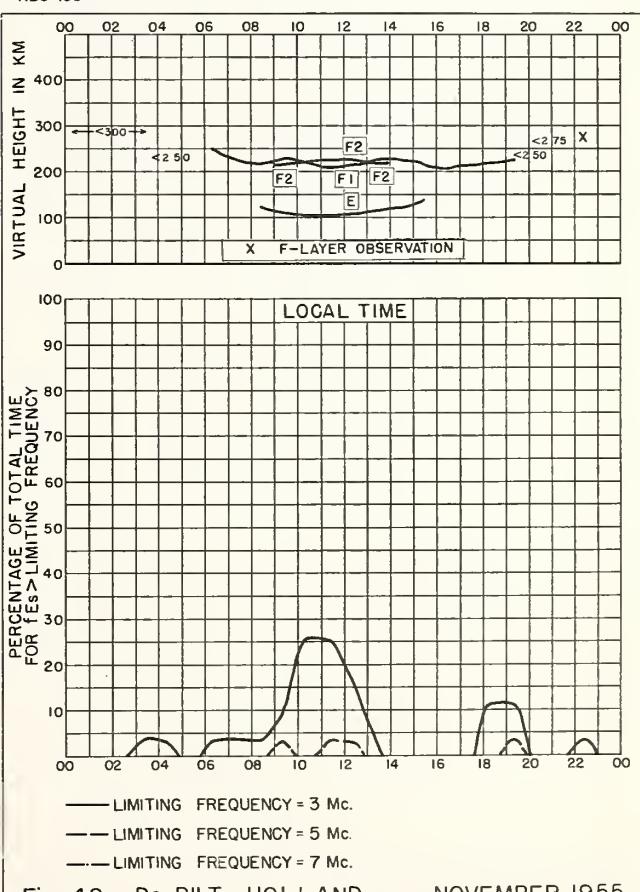


Fig. 48. De BILT, HOLLAND NOVEMBER 1955

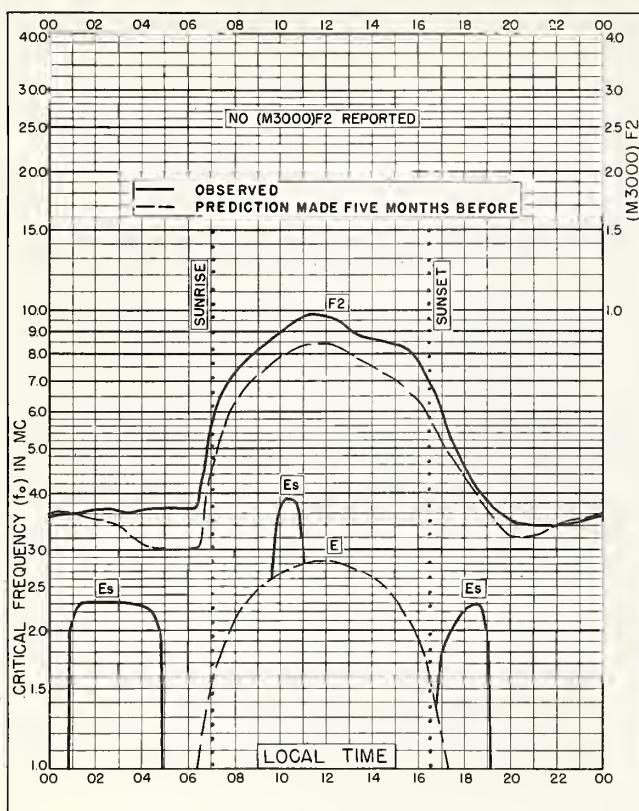


Fig. 49. WAKKANAI, JAPAN
45.4°N, 141.7°E NOVEMBER 1955

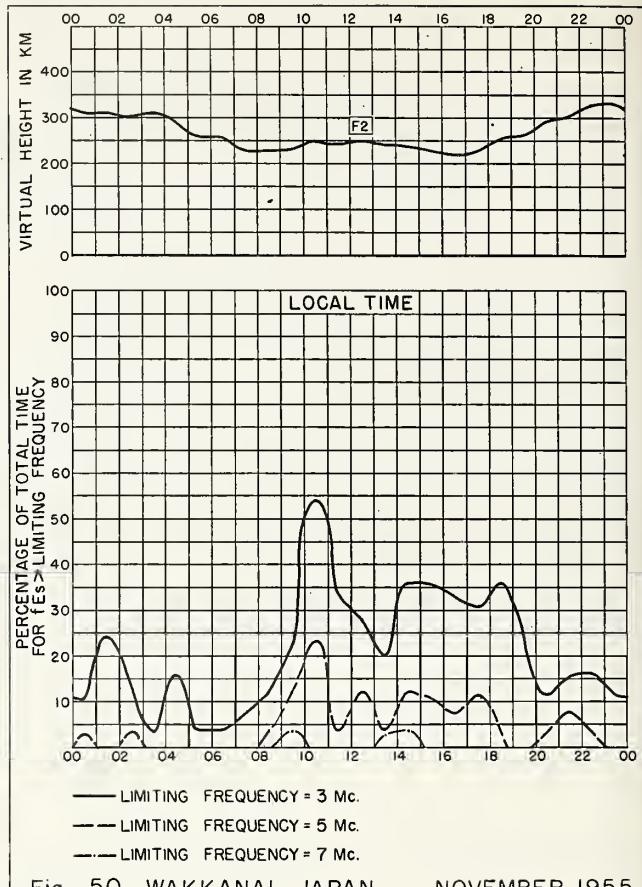


Fig. 50. WAKKANAI, JAPAN NOVEMBER 1955

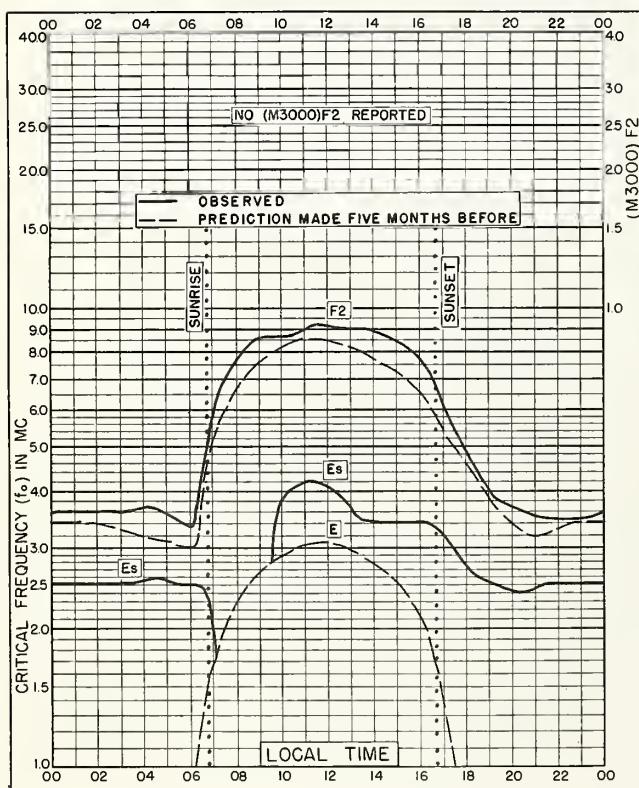


Fig. 51. AKITA, JAPAN
39.7°N, 140.1°E NOVEMBER 1955

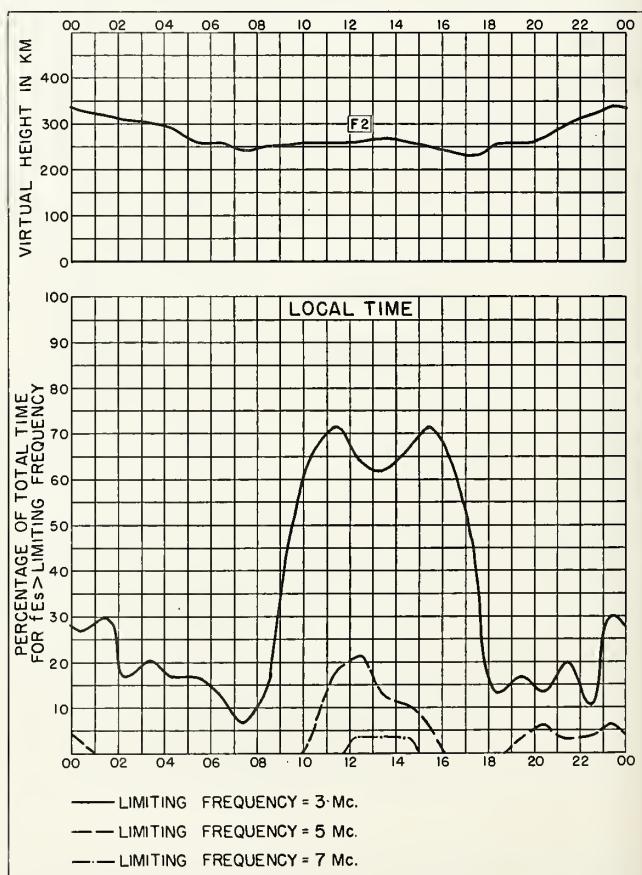


Fig. 52. AKITA, JAPAN NOVEMBER 1955

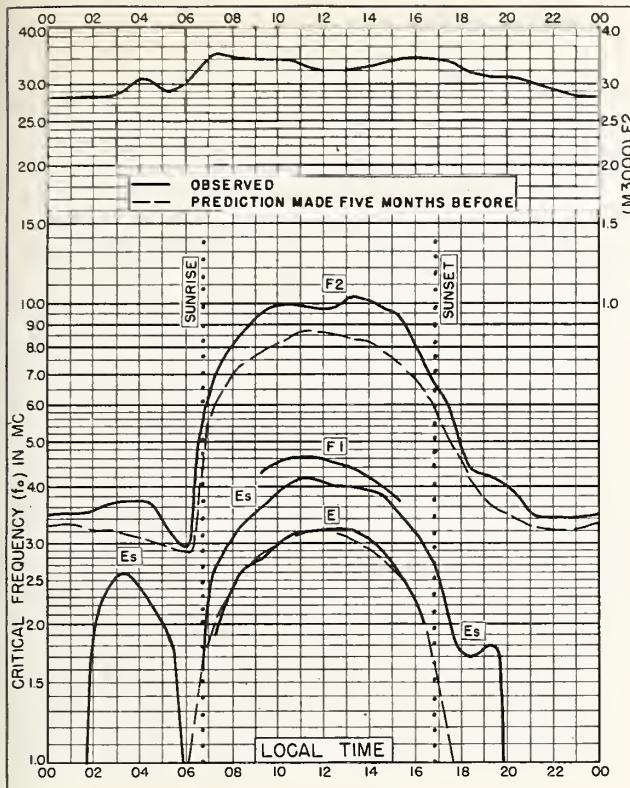


Fig. 53. TOKYO, JAPAN
35.7°N, 139.5°E NOVEMBER 1955

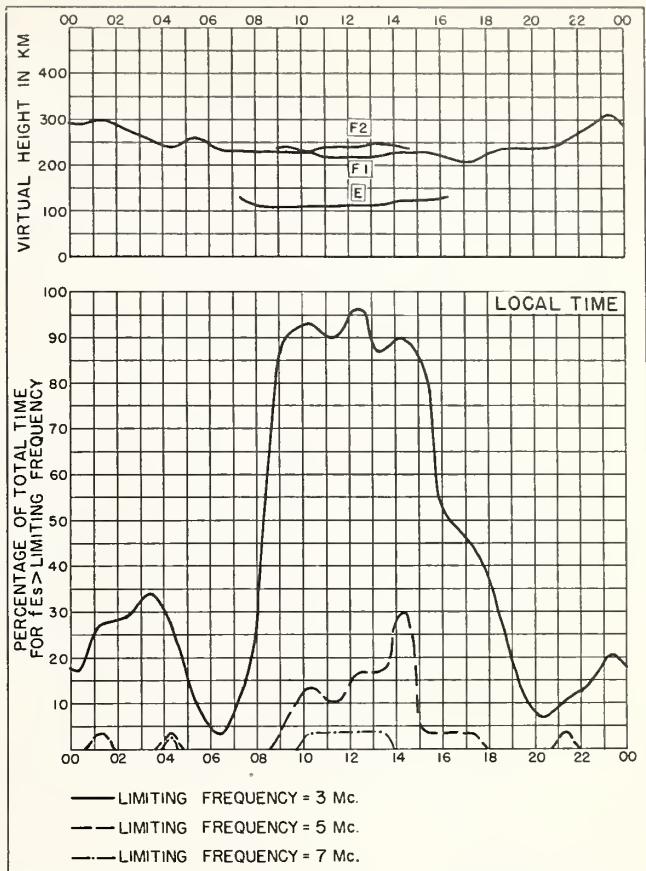


Fig. 54. TOKYO, JAPAN NOVEMBER 1955

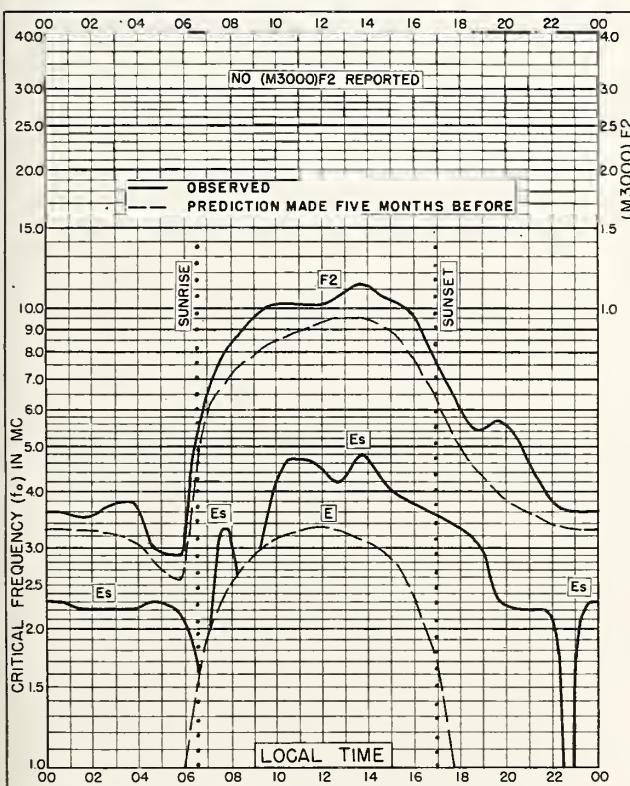


Fig. 55. YAMAGAWA, JAPAN
31.2°N, 130.6°E NOVEMBER 1955

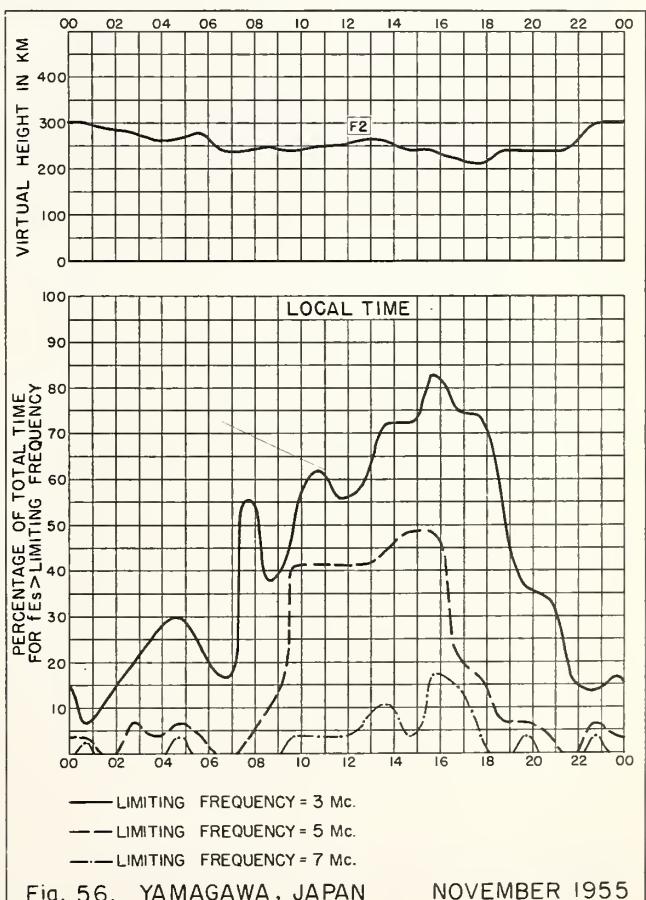


Fig. 56. YAMAGAWA, JAPAN NOVEMBER 1955

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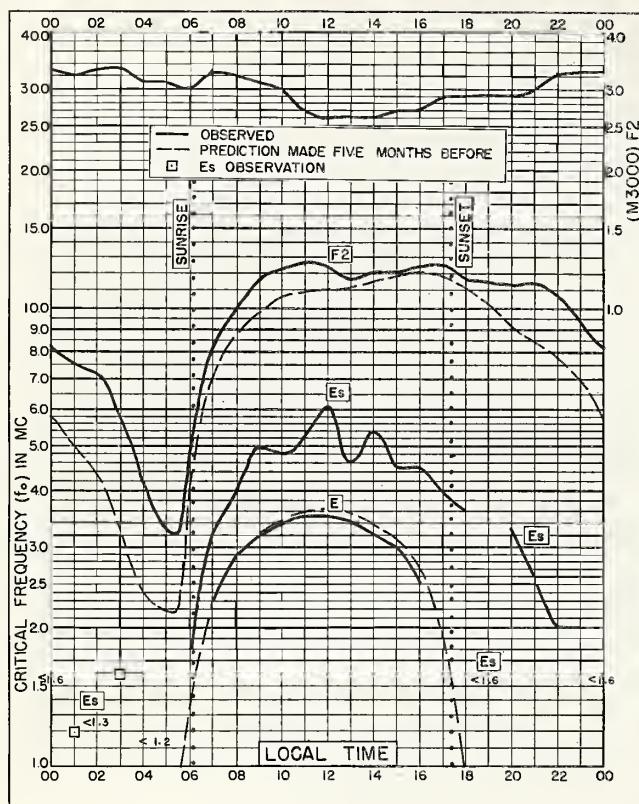


Fig. 57. BAGUIO, P. I.

16.4°N, 120.6°E

NOVEMBER 1955

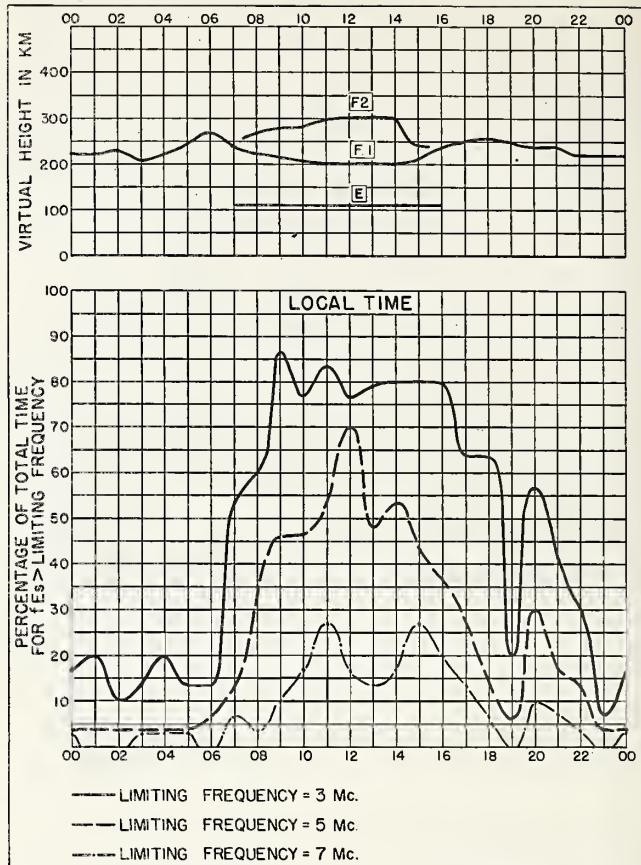


Fig. 58. BAGUIO, P. I.

NOVEMBER 1955

NBS 490

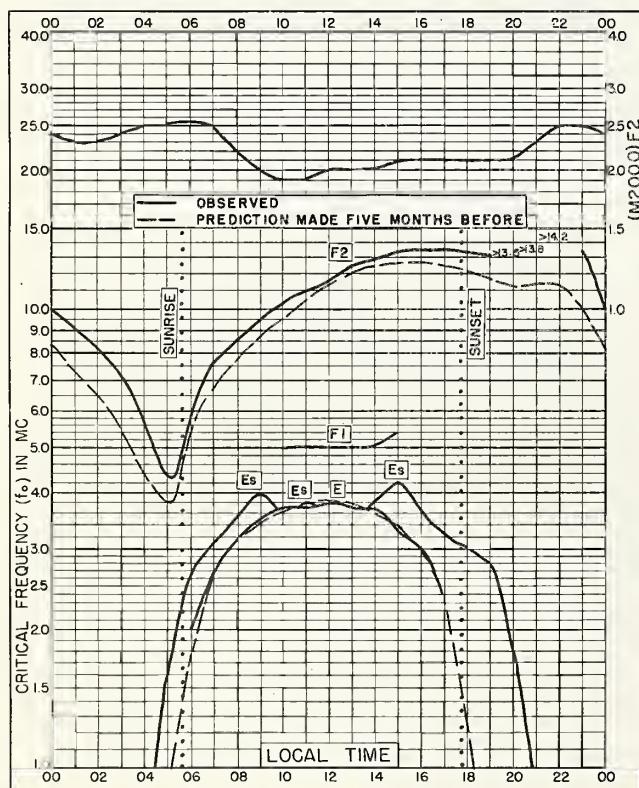


Fig. 59. LEOPOLDVILLE, BELGIAN CONGO

4.4°S, 15.2°E

NOVEMBER 1955

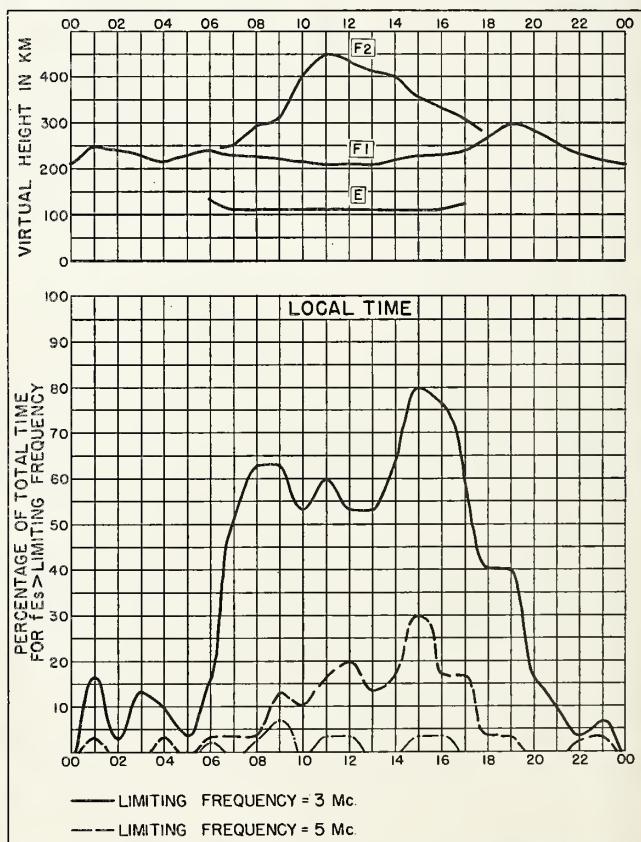


Fig. 60. LEOPOLDVILLE, BELGIAN CONGO

NBS 490

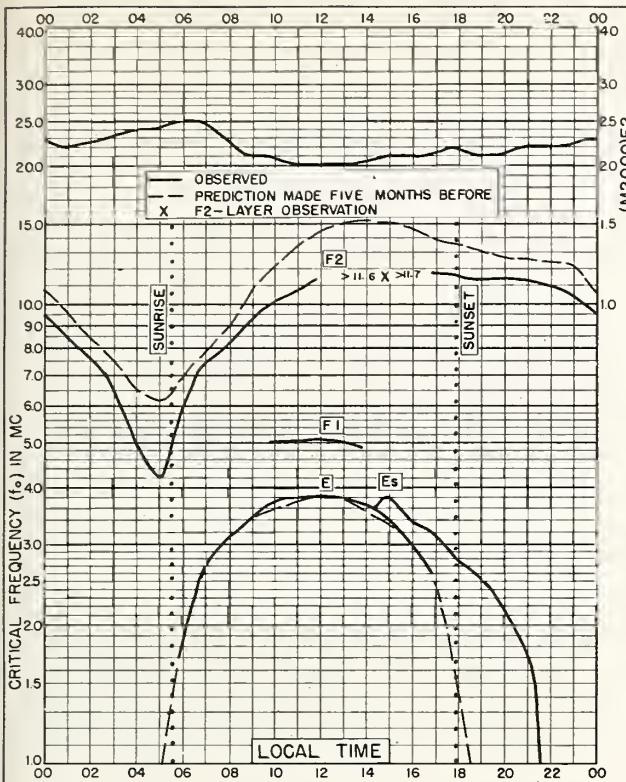


Fig. 61. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E NOVEMBER 1955

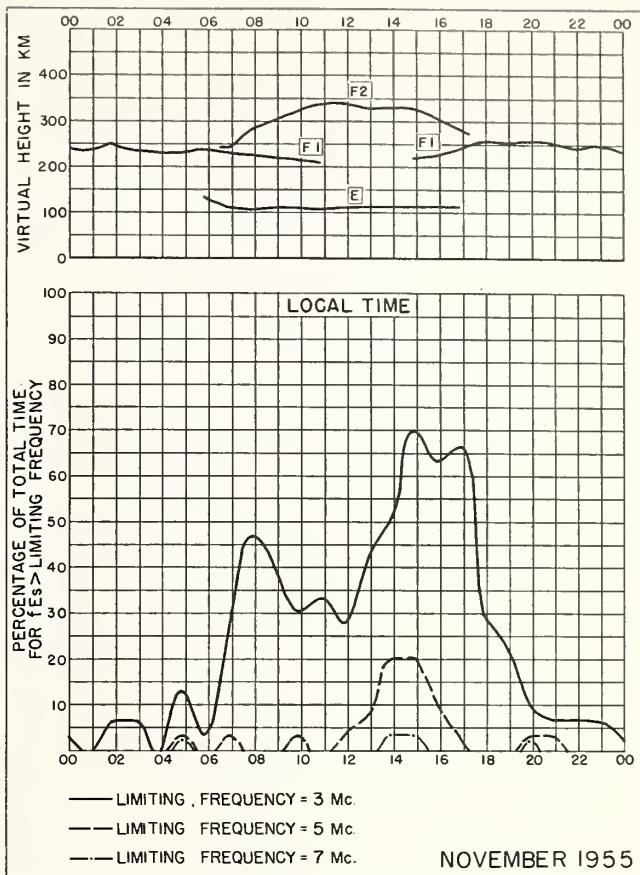


Fig. 62. ELISABETHVILLE, BELGIAN CONGO NOVEMBER 1955

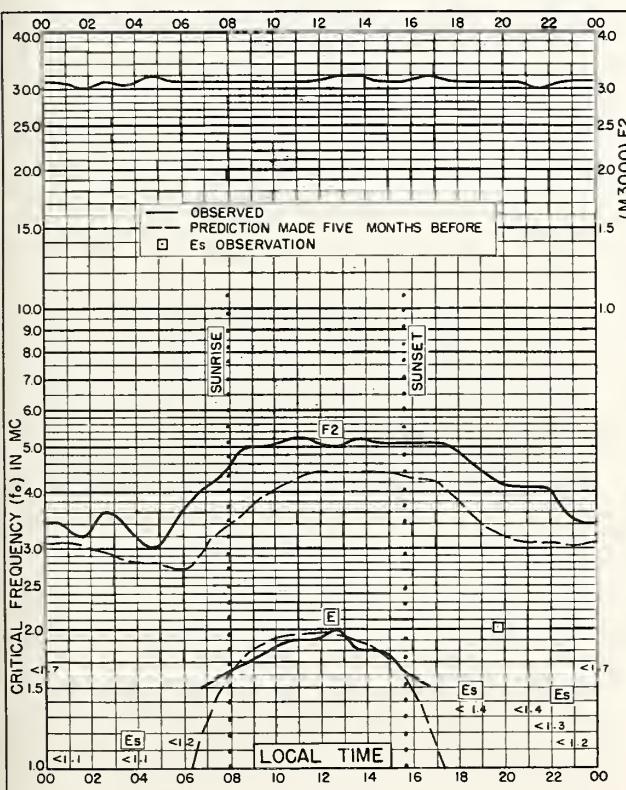


Fig. 63. RESOLUTE BAY, CANADA
74.7°N, 94.9°W OCTOBER 1955

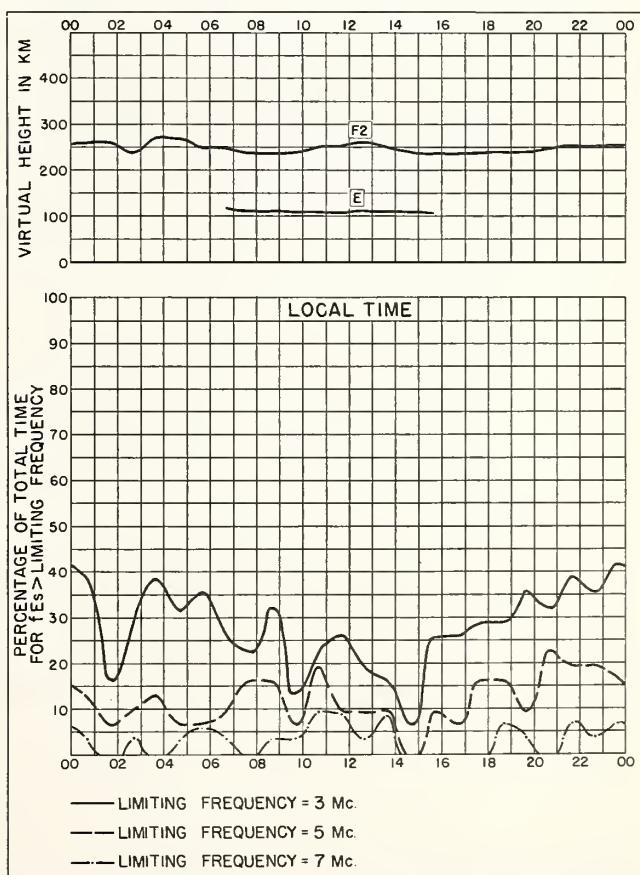
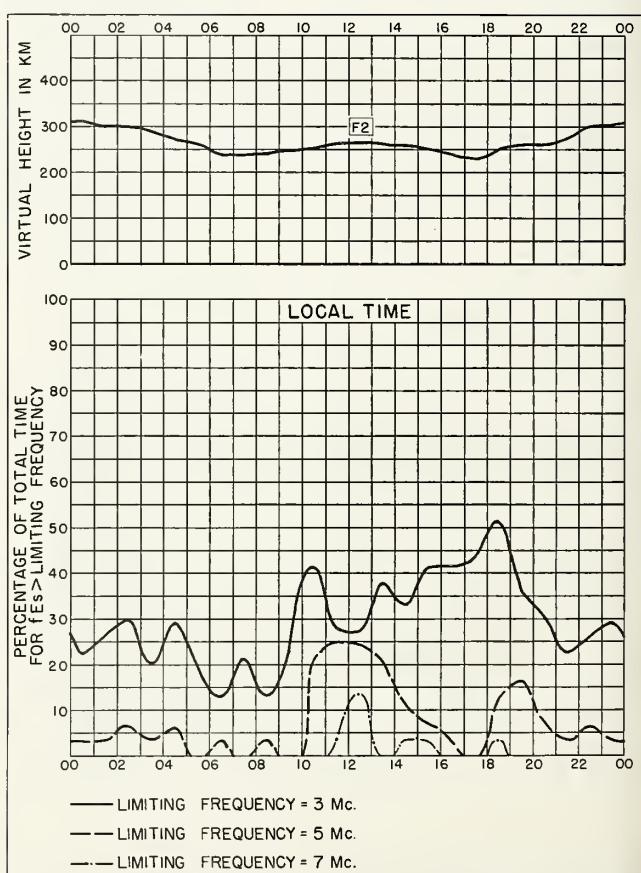
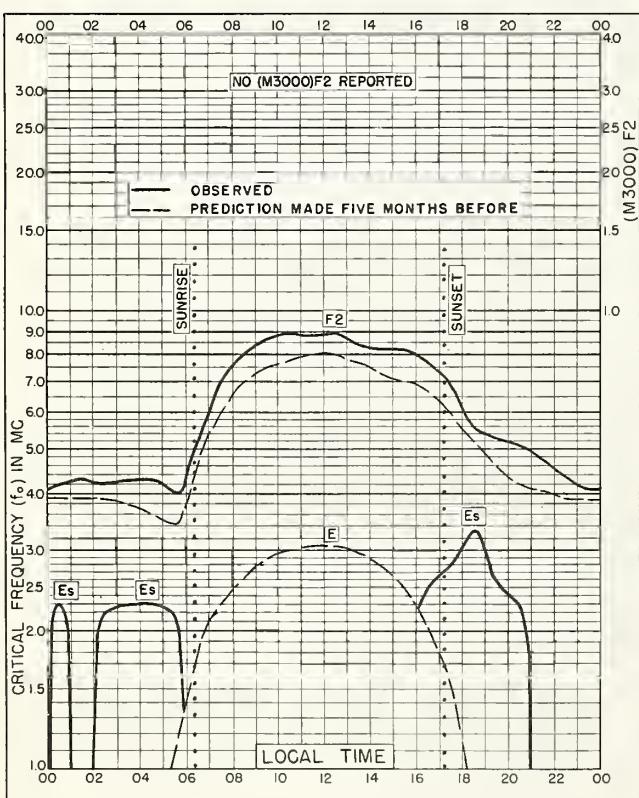
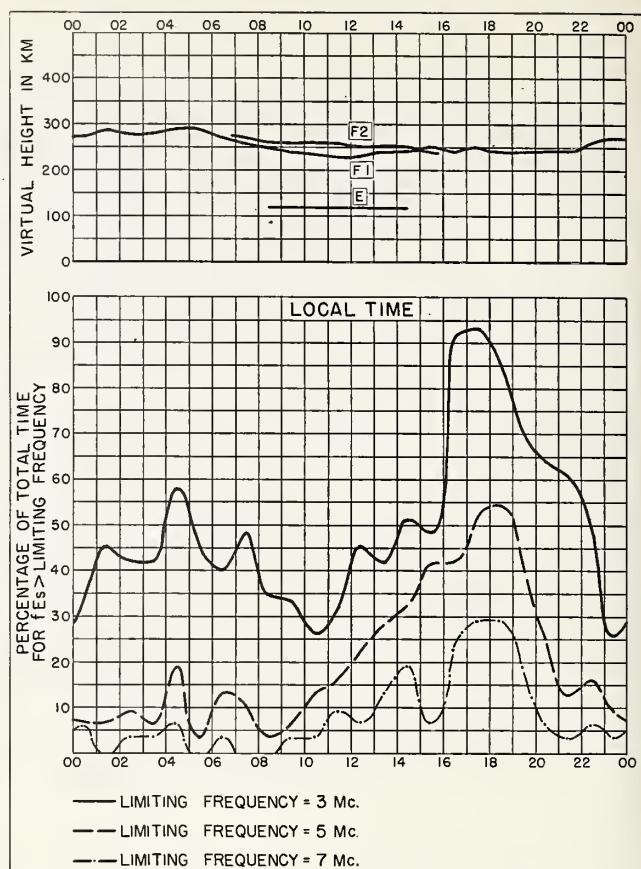
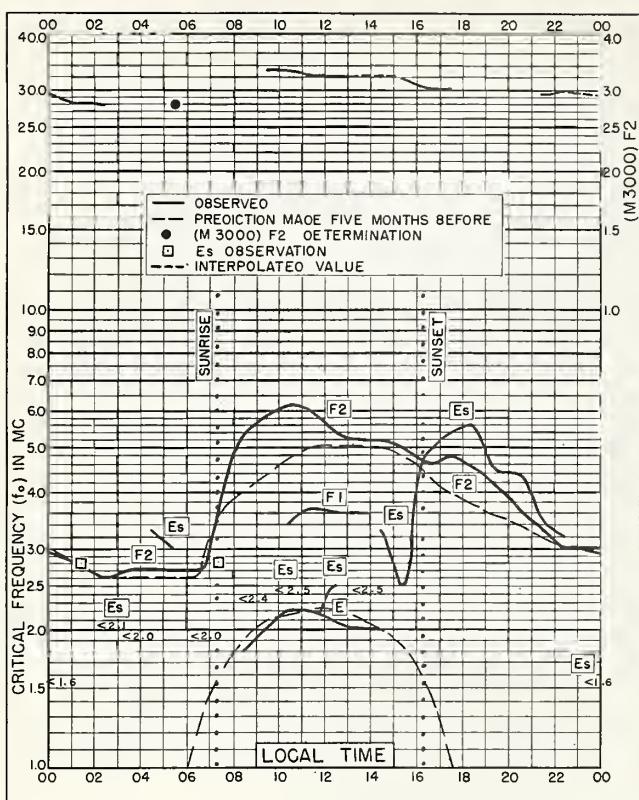
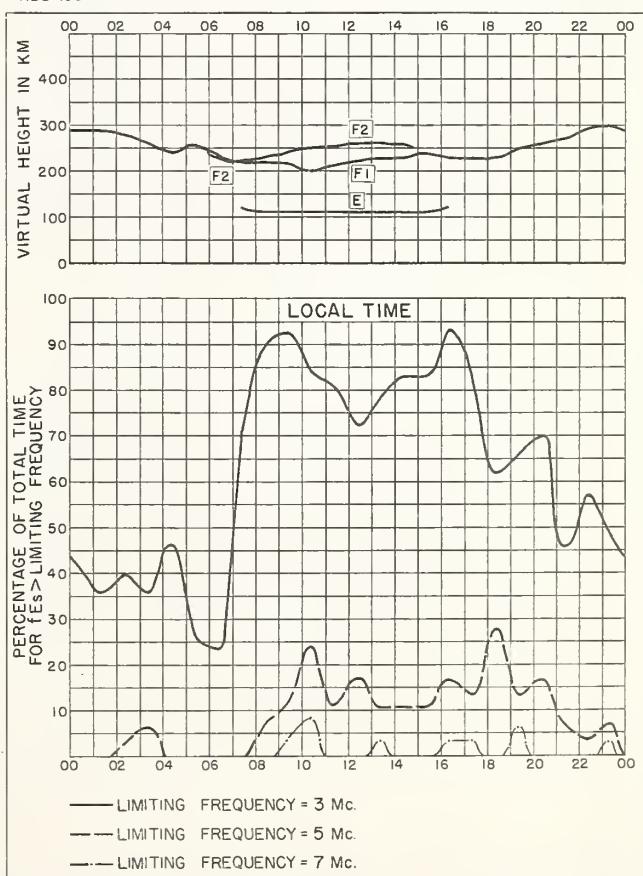
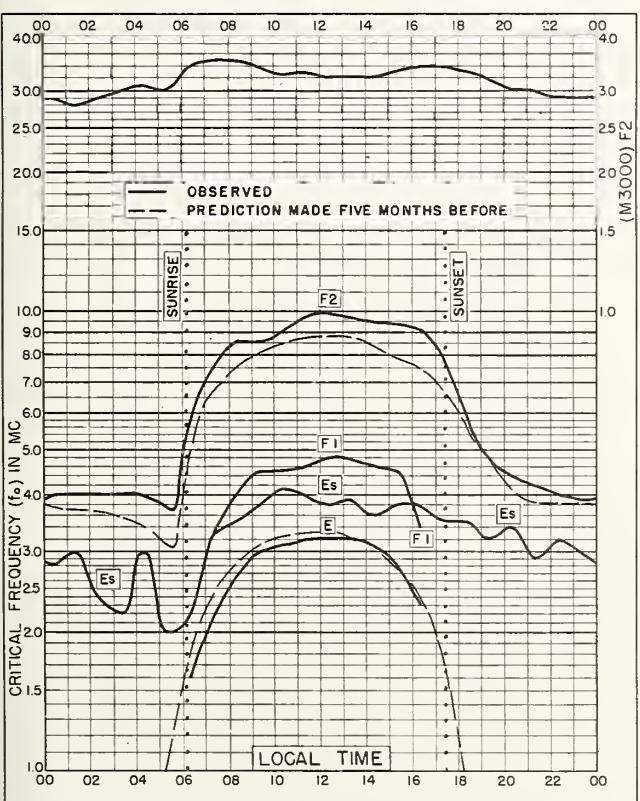
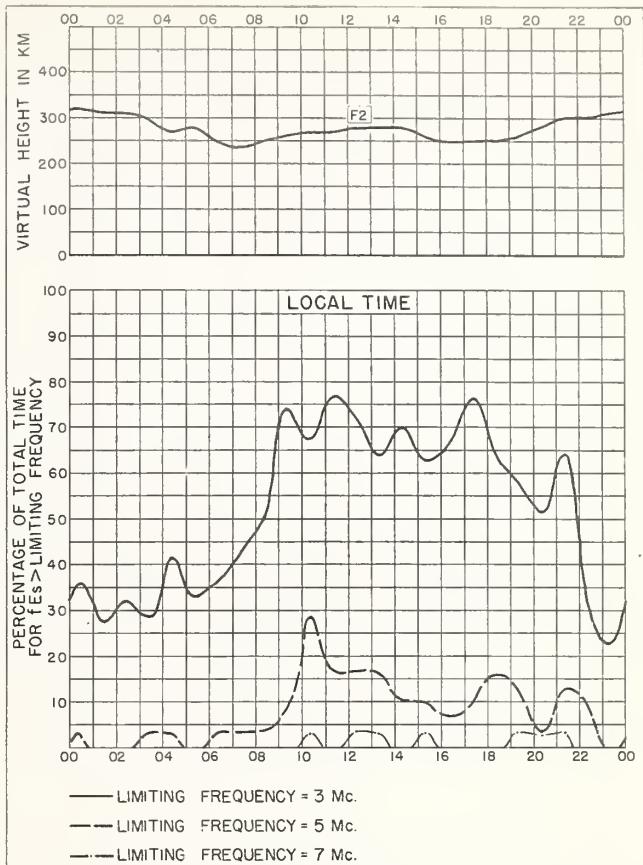
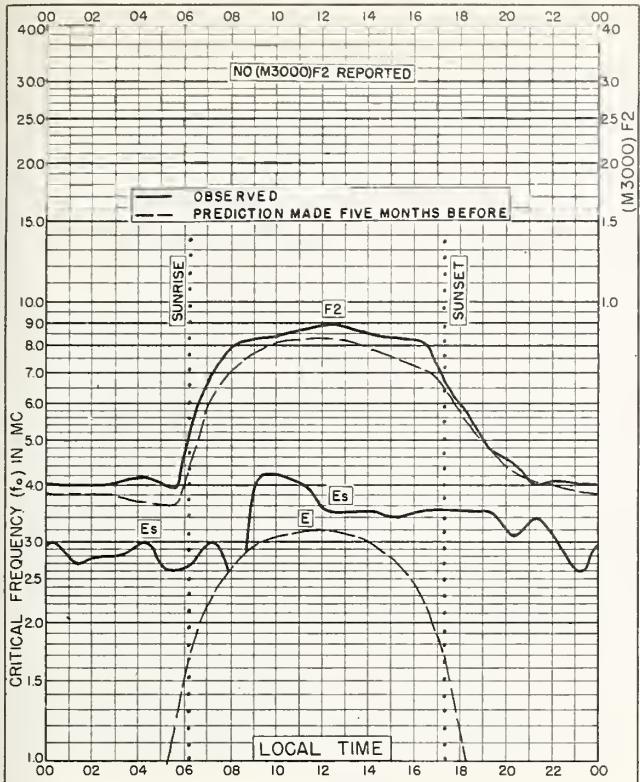


Fig. 64. RESOLUTE BAY, CANADA OCTOBER 1955

NBS 490





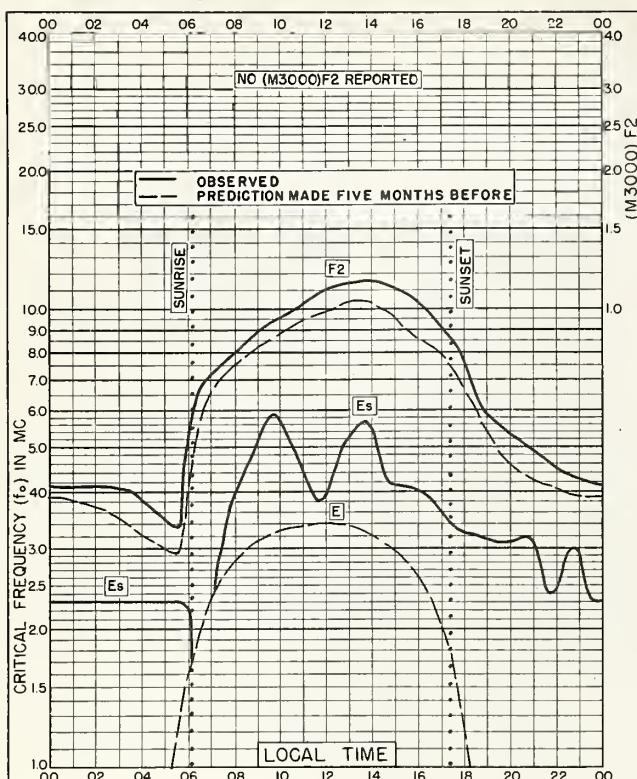


Fig. 73. YAMAGAWA, JAPAN
31.2°N, 130.6°E OCTOBER 1955

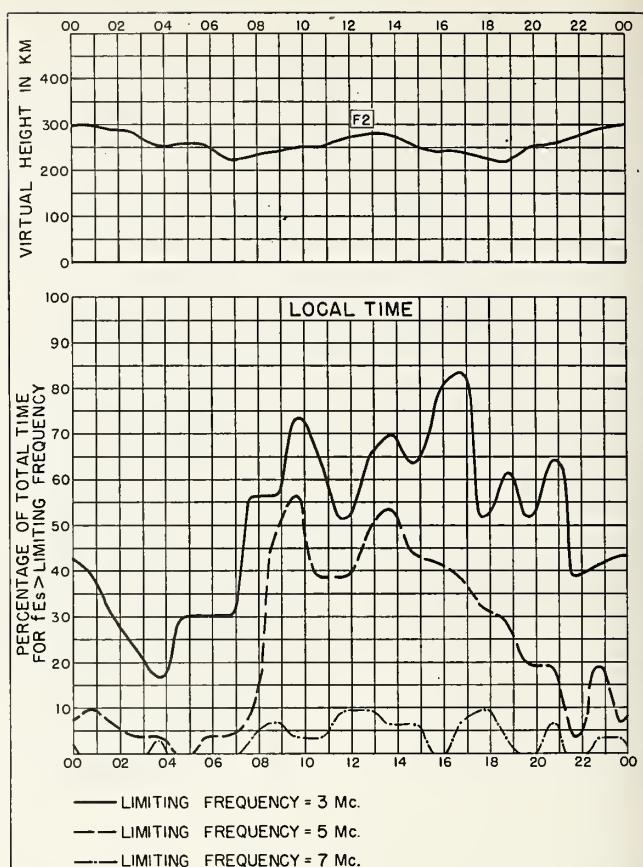


Fig. 74. YAMAGAWA, JAPAN OCTOBER 1955

NBS 490

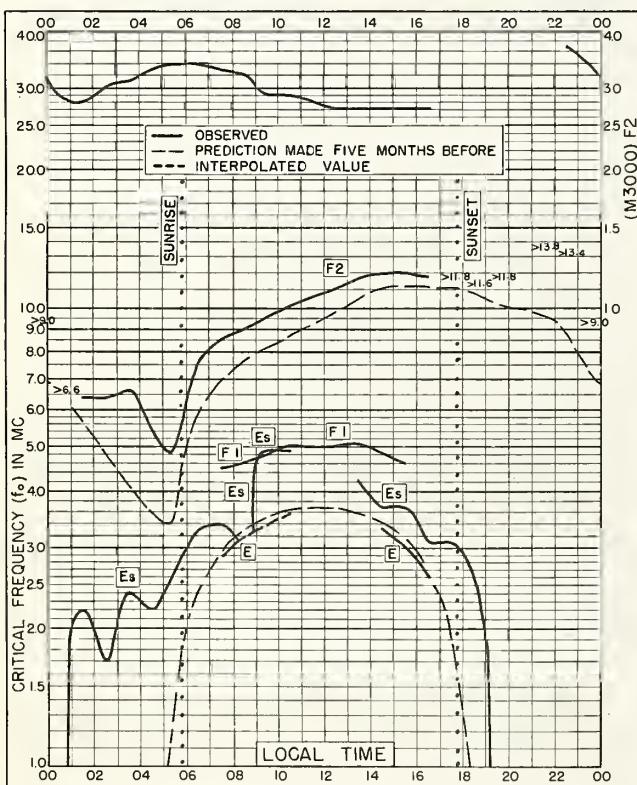


Fig. 75. NAIROBI, KENYA
1.3°S, 36.8°E OCTOBER 1955

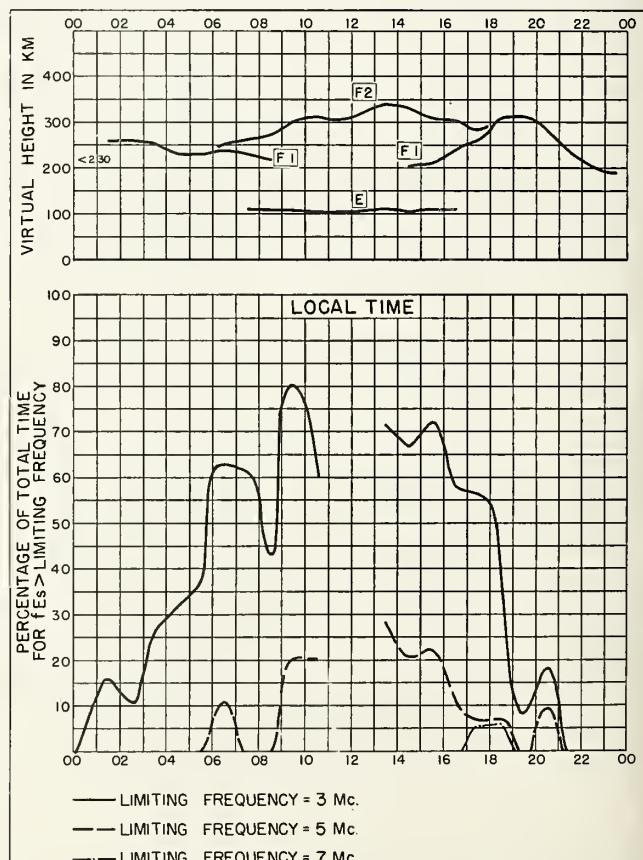


Fig. 76. NAIROBI, KENYA OCTOBER 1955

NBS 490

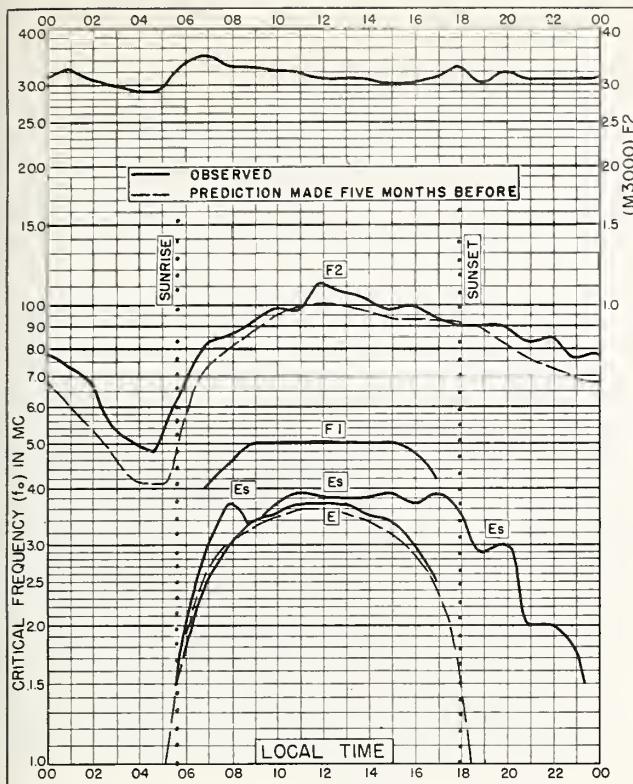


Fig. 77. RAROTONGA I.
21.3°S, 159.8°W OCTOBER 1955

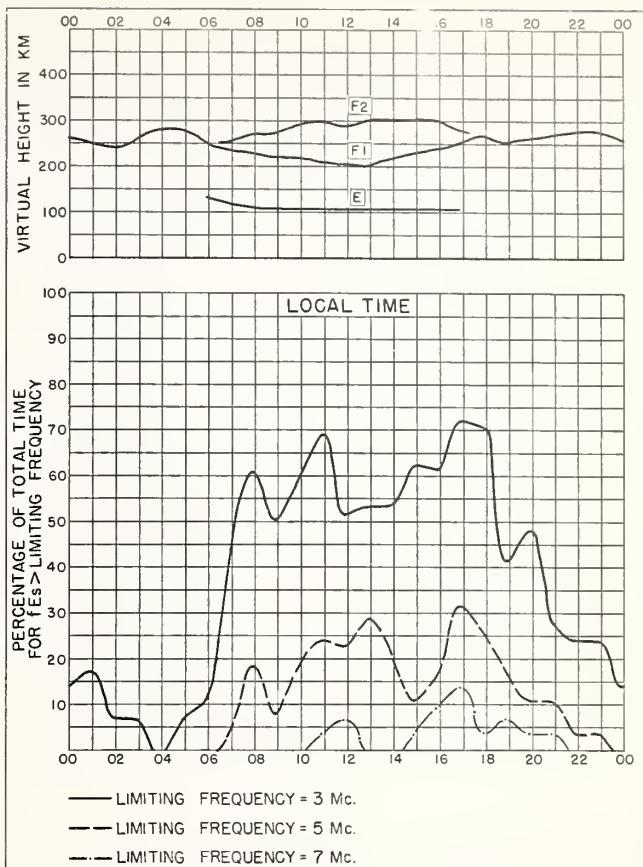


Fig. 78. RAROTONGA I. OCTOBER 1955

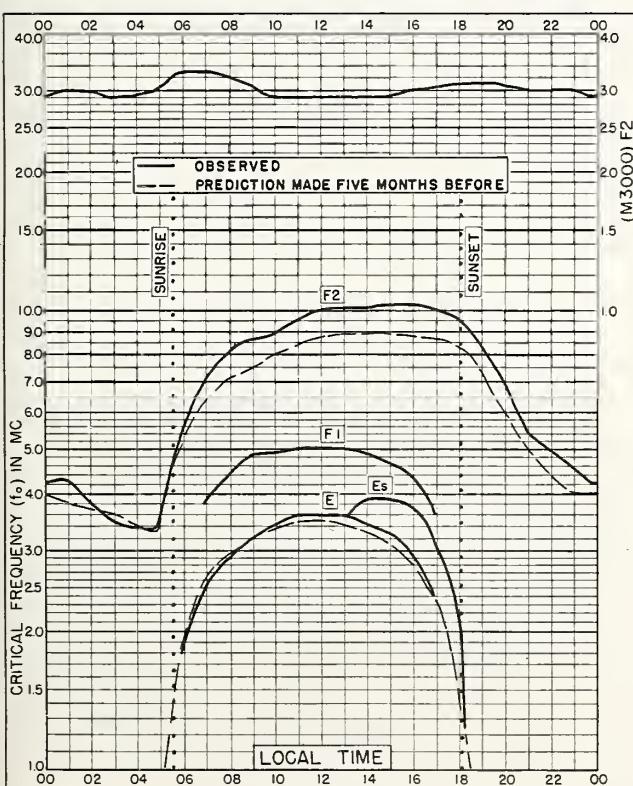


Fig. 79. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E OCTOBER 1955

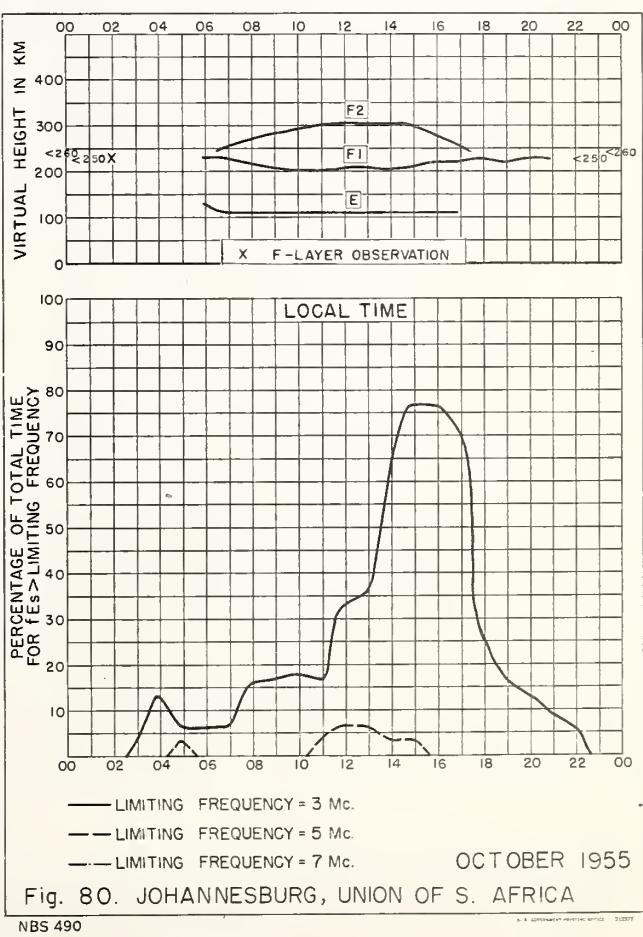


Fig. 80. JOHANNESBURG, UNION OF S. AFRICA OCTOBER 1955

N.B. GOVERNMENT PRINTING OFFICE 1955

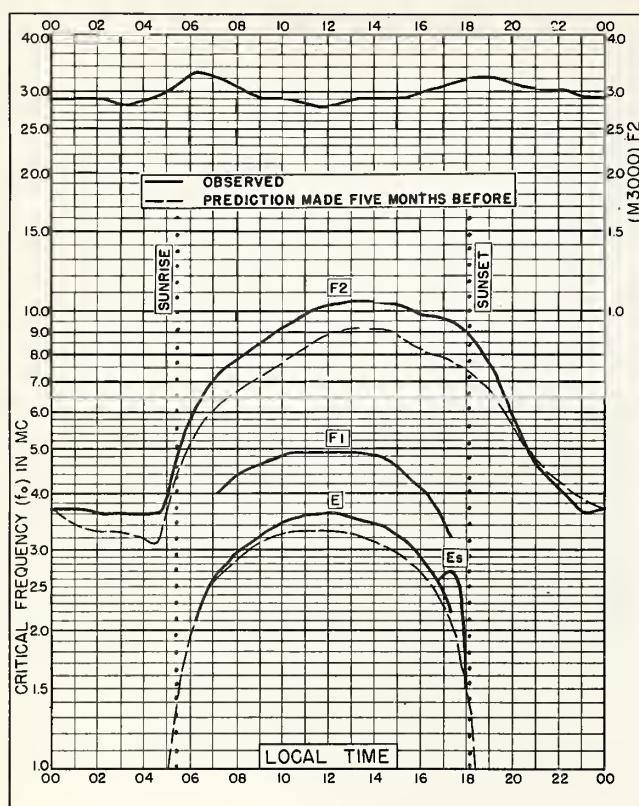


Fig. 81. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E OCTOBER 1955

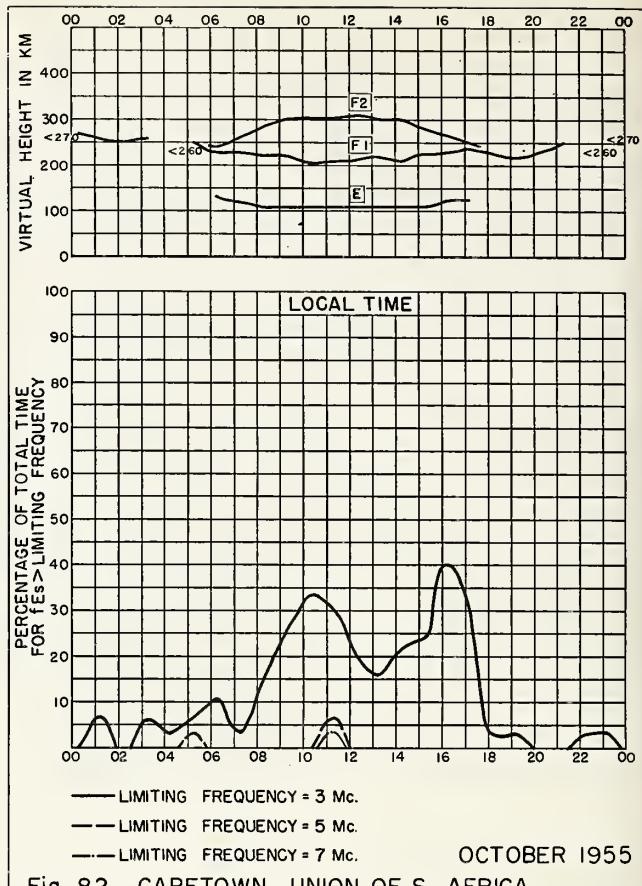


Fig. 82. CAPETOWN, UNION OF S. AFRICA

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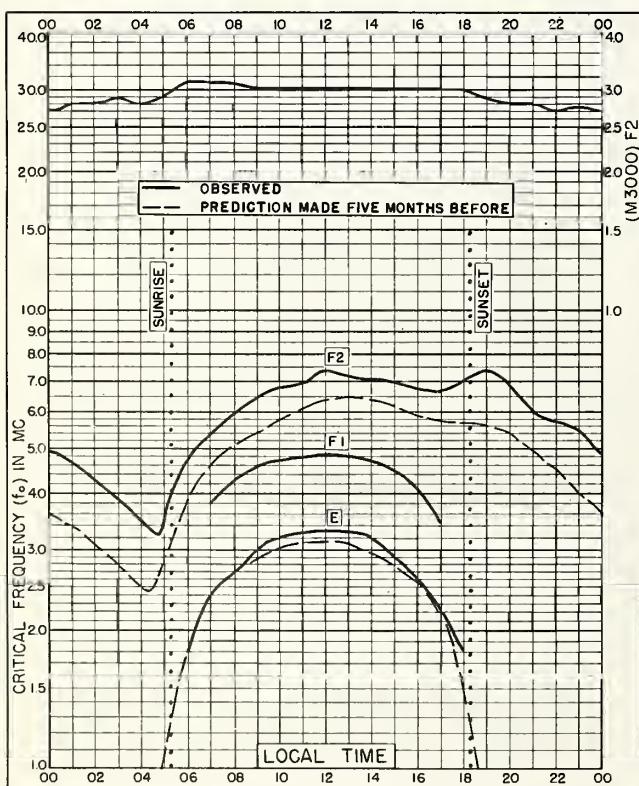


Fig. 83. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E OCTOBER 1955

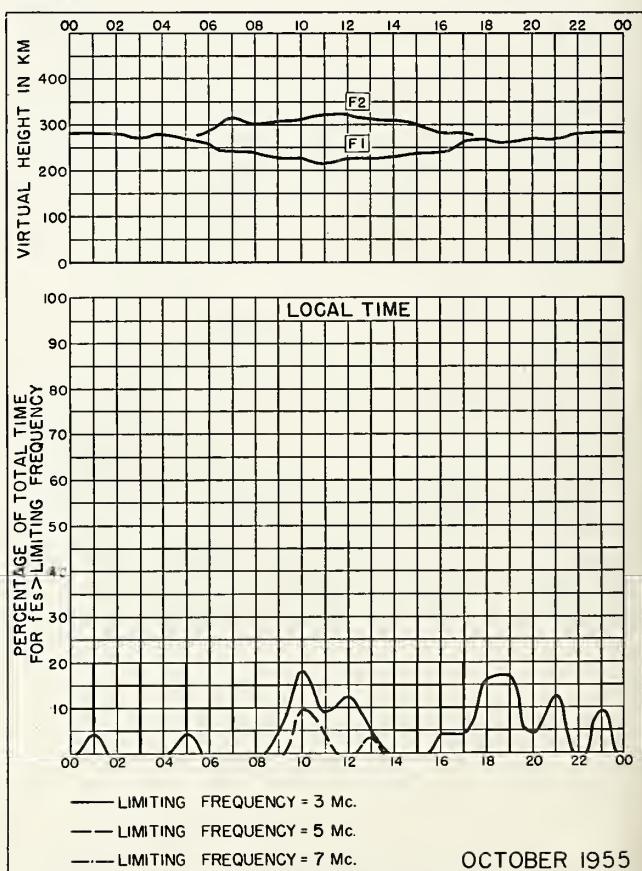


Fig. 84. CHRISTCHURCH, NEW ZEALAND

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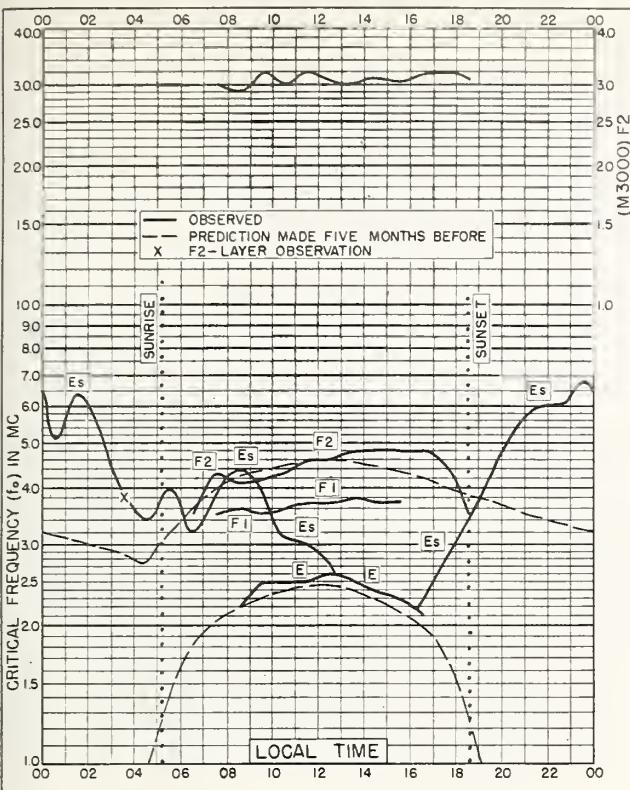
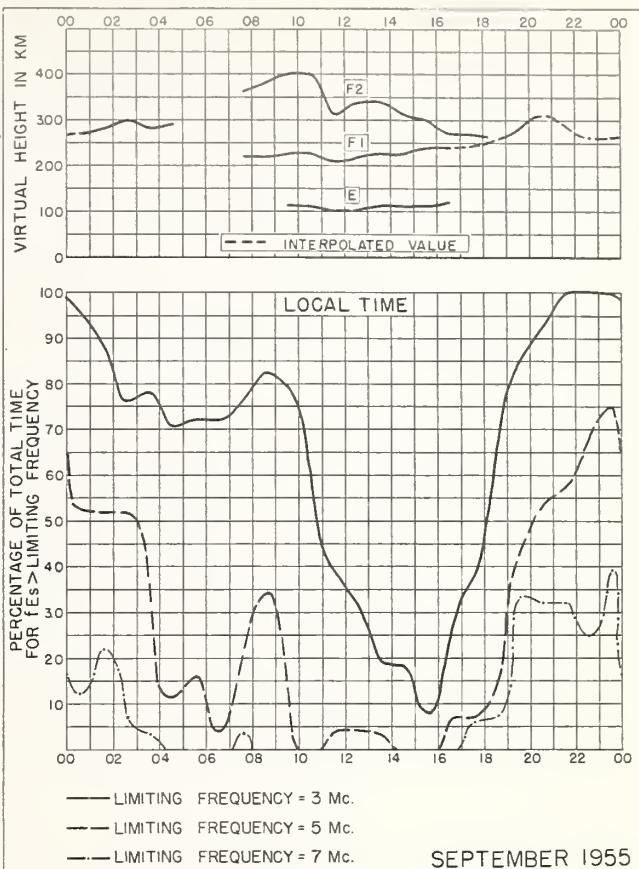


Fig. 85. POINT BARROW, ALASKA
71.3°N, 156.8°W SEPTEMBER 1955



SEPTEMBER 1955

Fig. 86. POINT BARROW, ALASKA

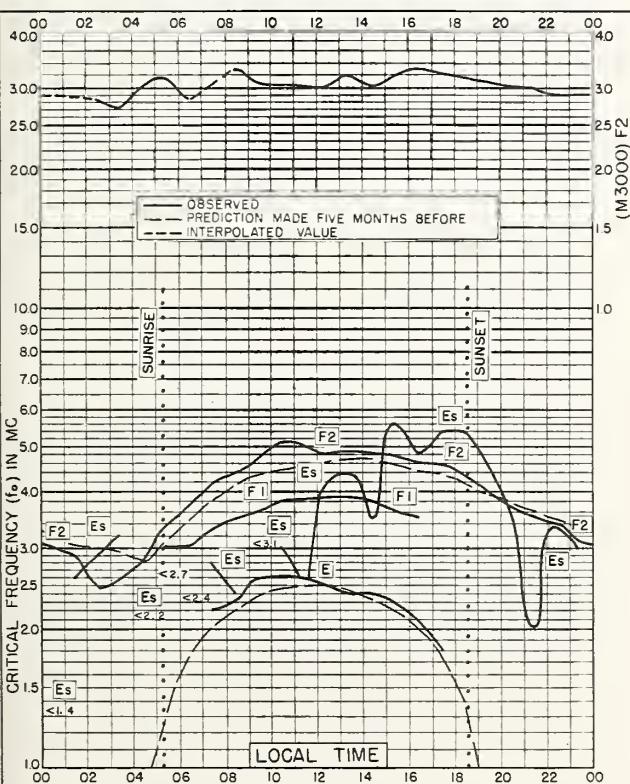
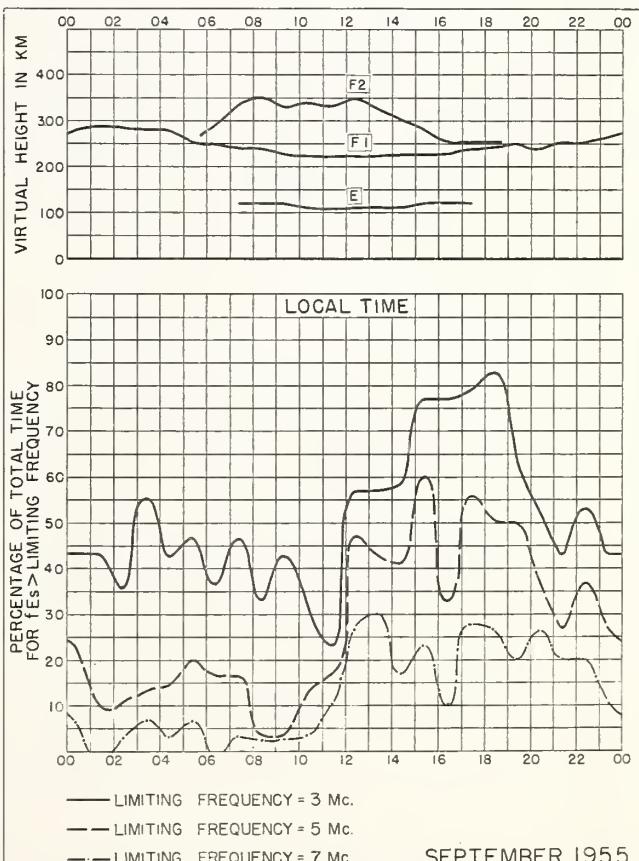


Fig. 87. GODHAVN, GREENLAND
69.2°N, 53.5°W SEPTEMBER 1955



SEPTEMBER 1955

Fig. 88. GODHAVN, GREENLAND

NBS 490

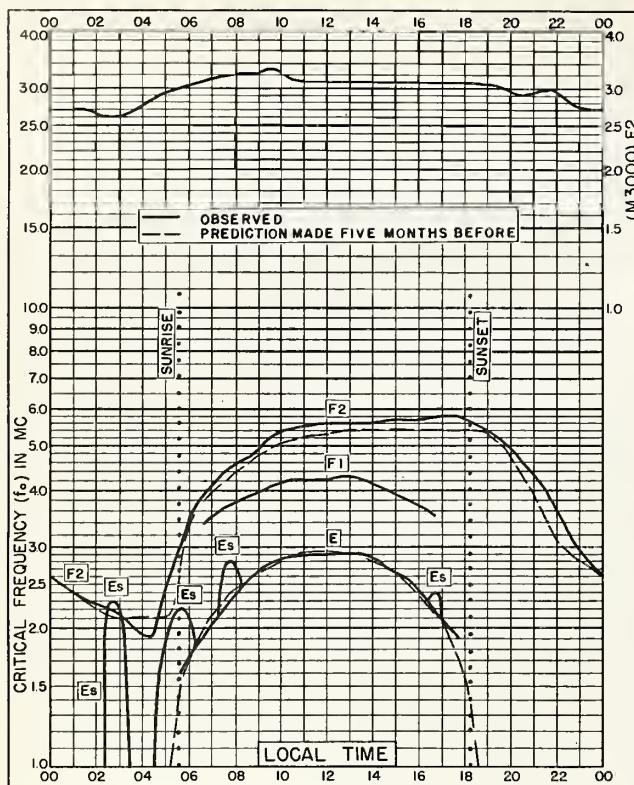


Fig. 89. INVERNESS, SCOTLAND

57.4°N, 4.2°W

SEPTEMBER 1955

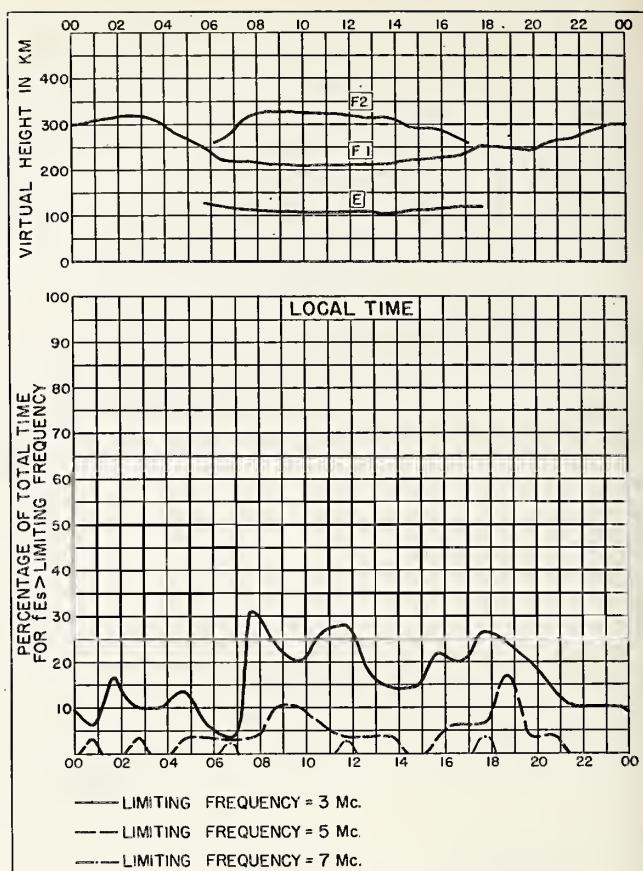


Fig. 90. INVERNESS, SCOTLAND SEPTEMBER 1955

NBS 490

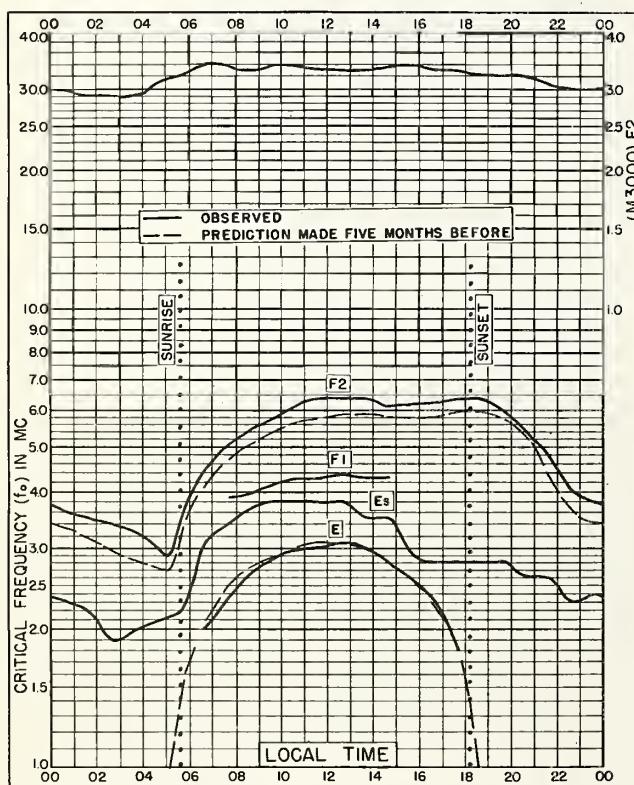


Fig. 91. LINDAU/HARZ, GERMANY

51.6°N, 10.1°E

SEPTEMBER 1955

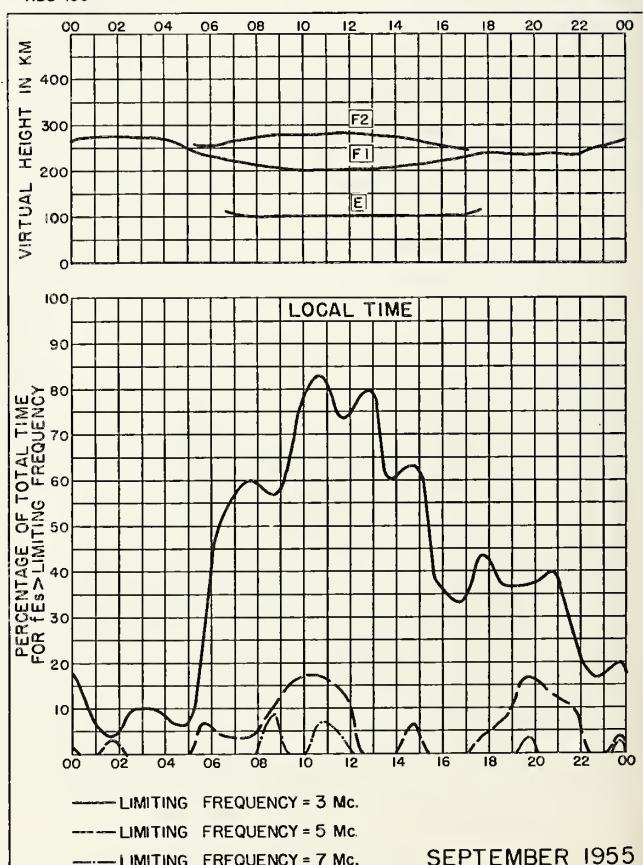


Fig. 92. LINDAU/HARZ, GERMANY

SEPTEMBER 1955

NBS 490

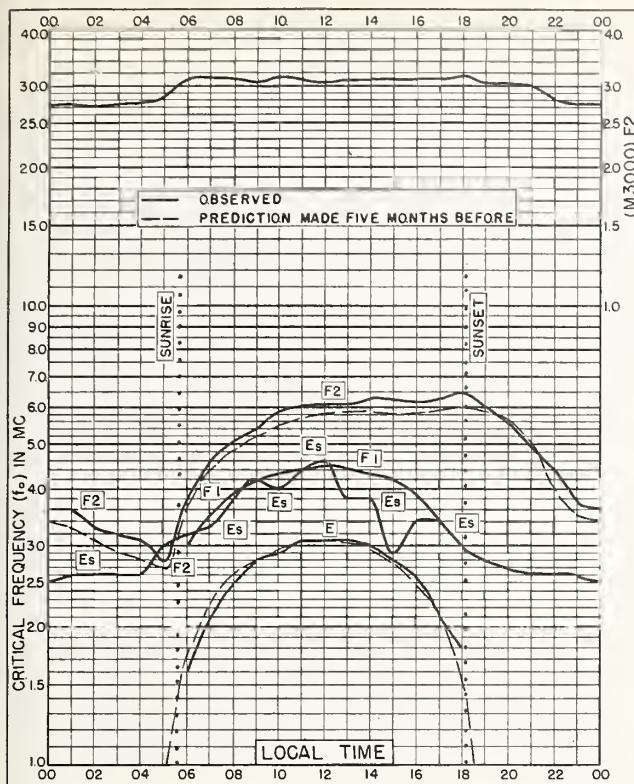


Fig. 93. SLOUGH, ENGLAND
51.5°N, 0.6°W SEPTEMBER 1955

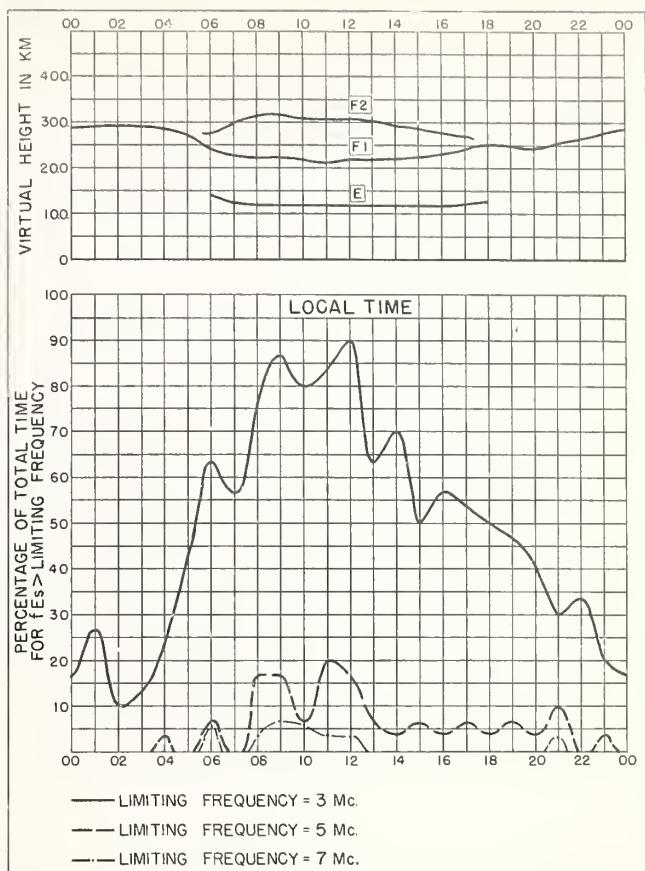


Fig. 94. SLOUGH, ENGLAND SEPTEMBER 1955

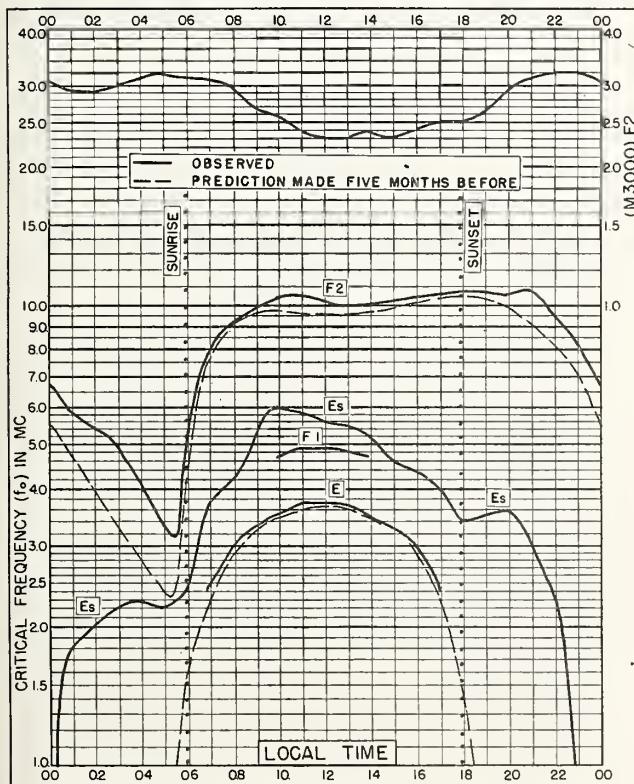


Fig. 95. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E SEPTEMBER 1955

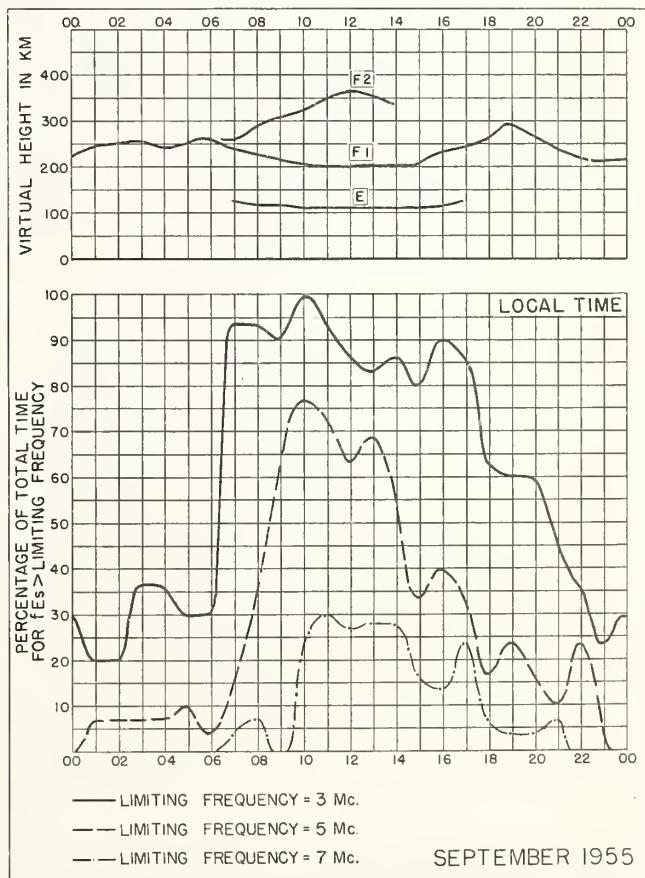
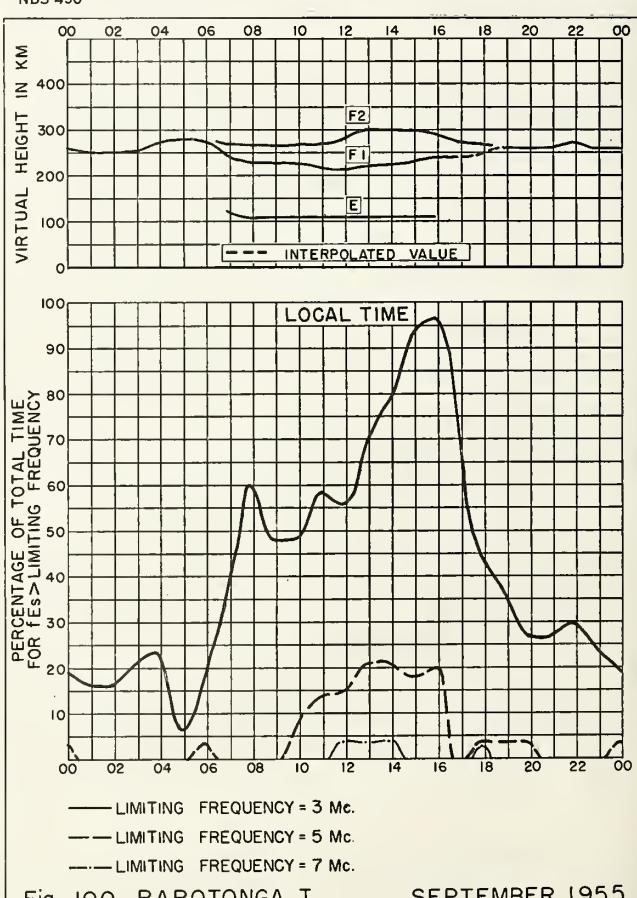
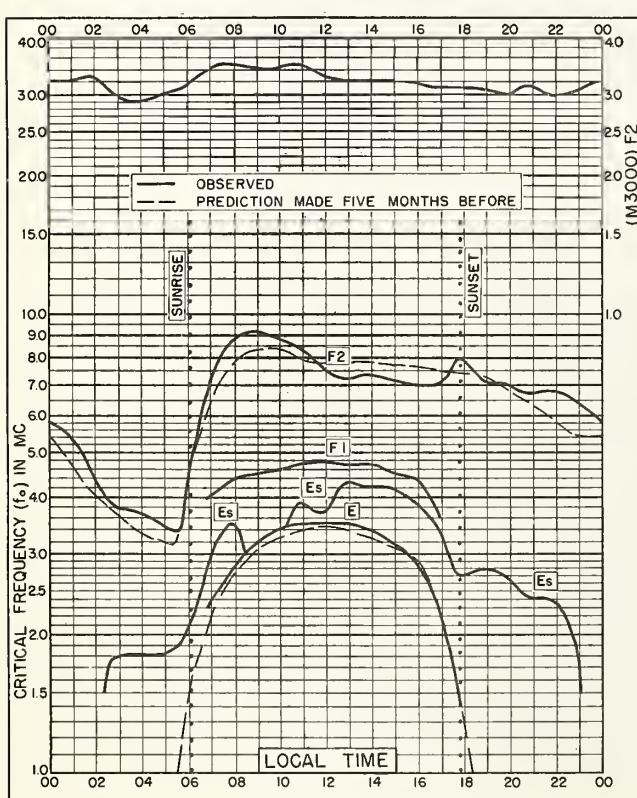
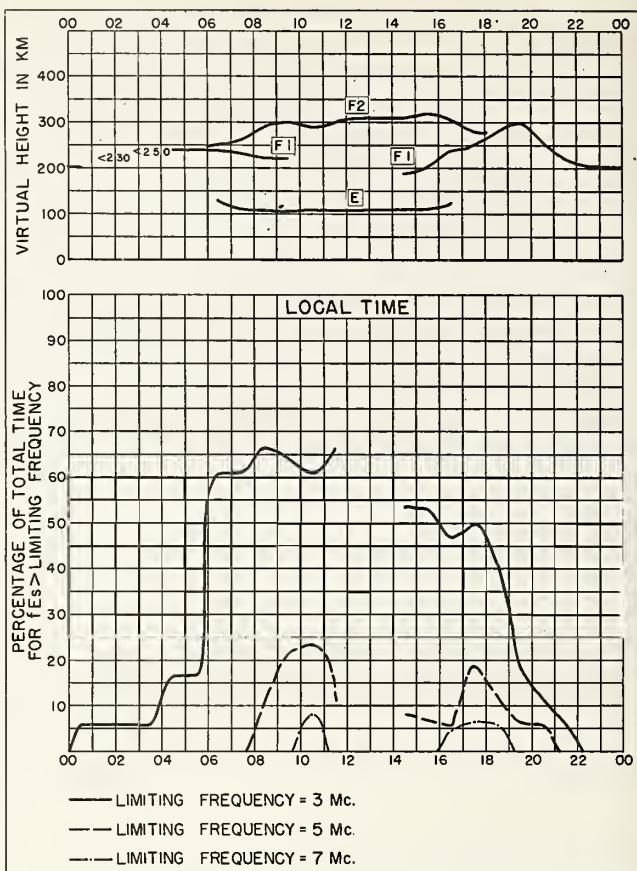
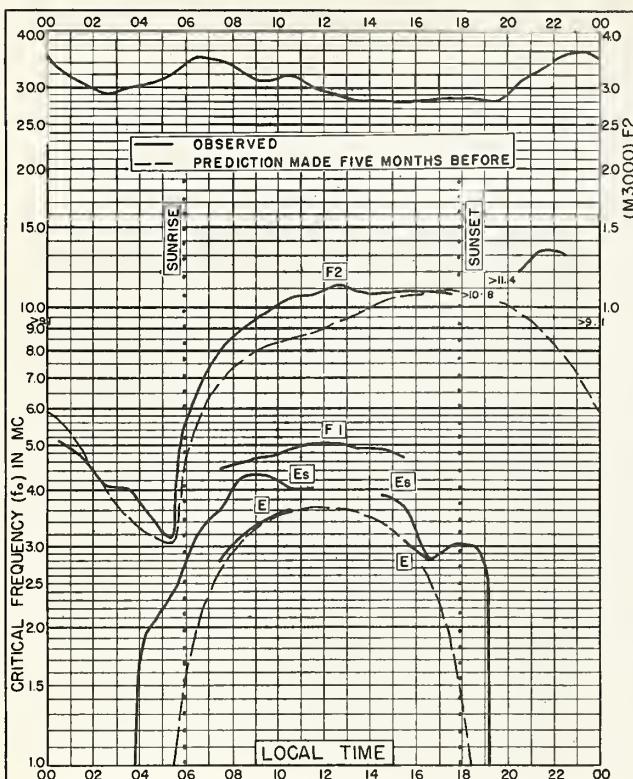


Fig. 96. SINGAPORE, BRITISH MALAYA SEPTEMBER 1955

NBS 490



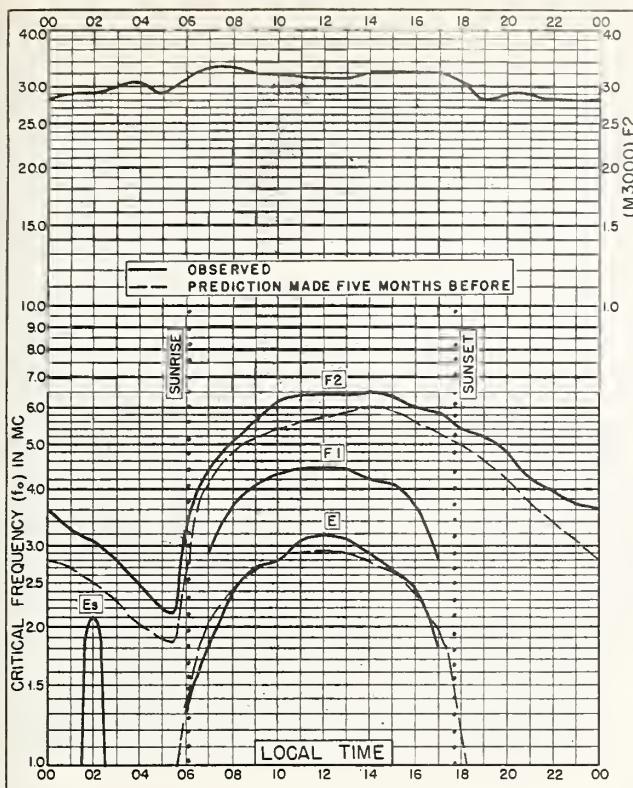
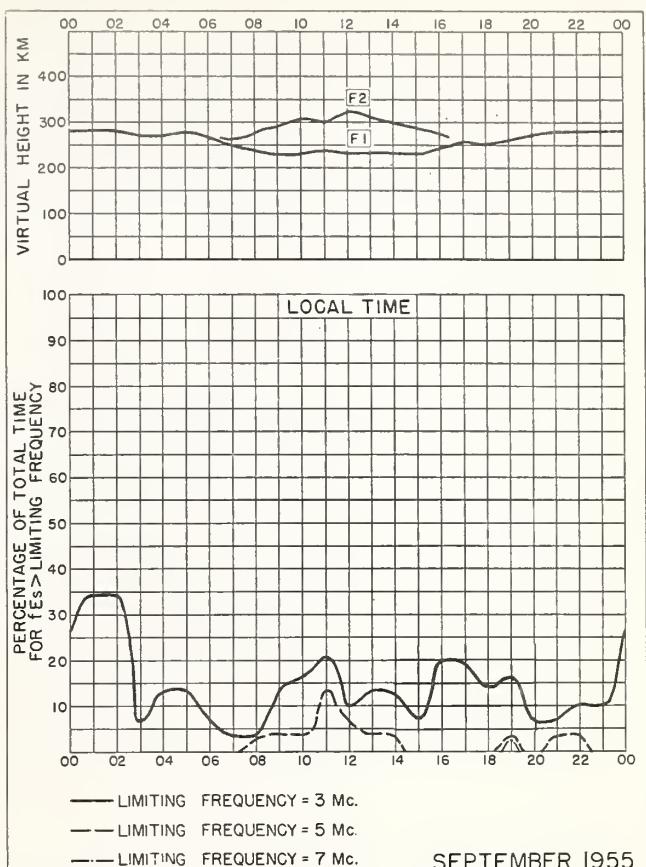


Fig. 101. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E SEPTEMBER 1955



NBS 490

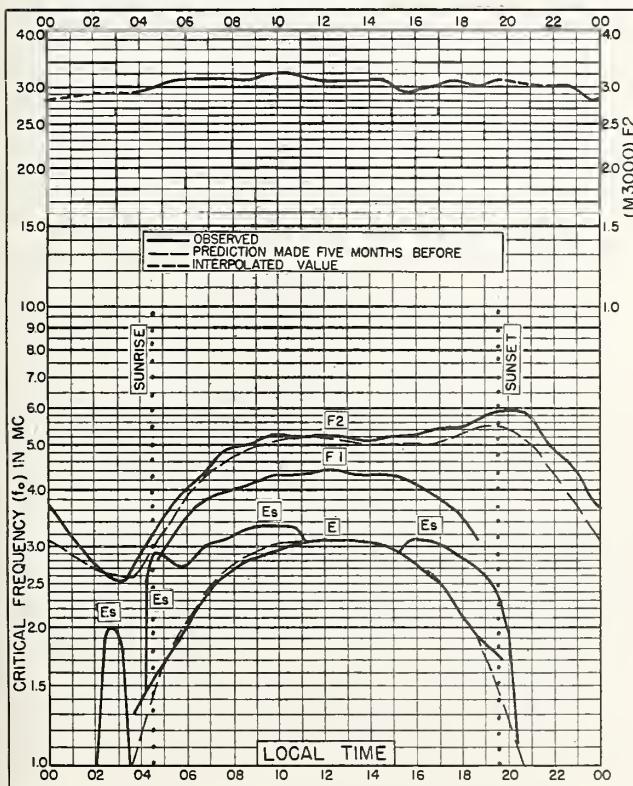
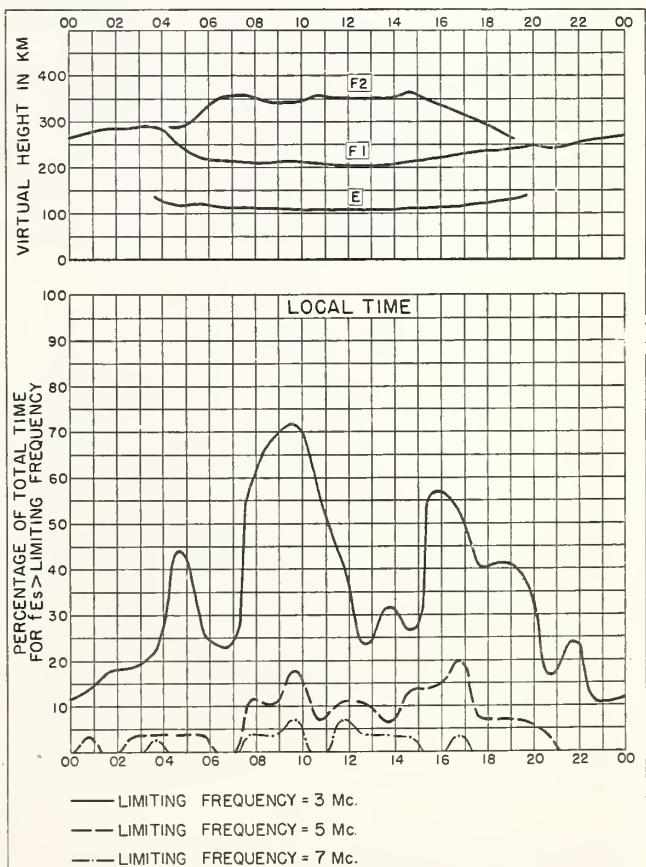


Fig. 103. INVERNESS, SCOTLAND
57.4°N, 4.2°W AUGUST 1955



NBS 490

Fig. 104. INVERNESS, SCOTLAND AUGUST 1955

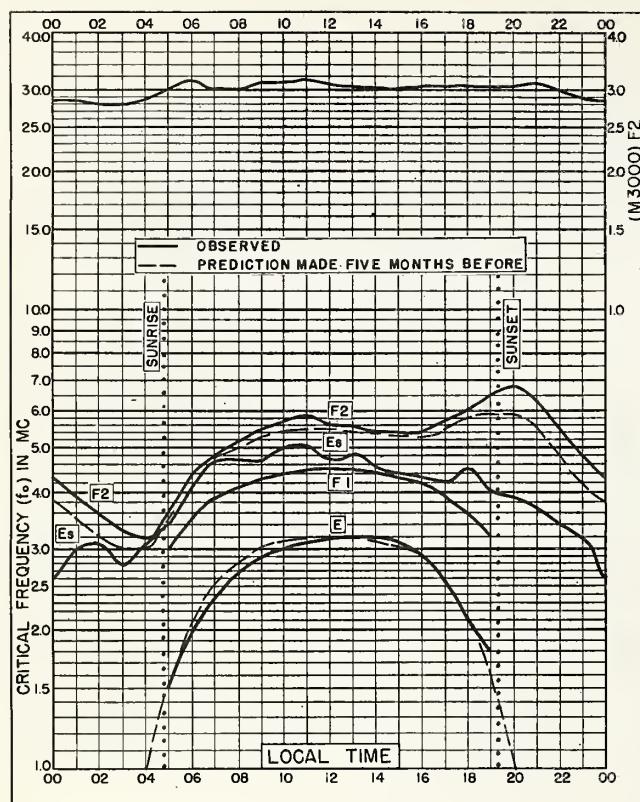


Fig. 105. SLOUGH, ENGLAND

51.5°N, 0.6°W

AUGUST 1955

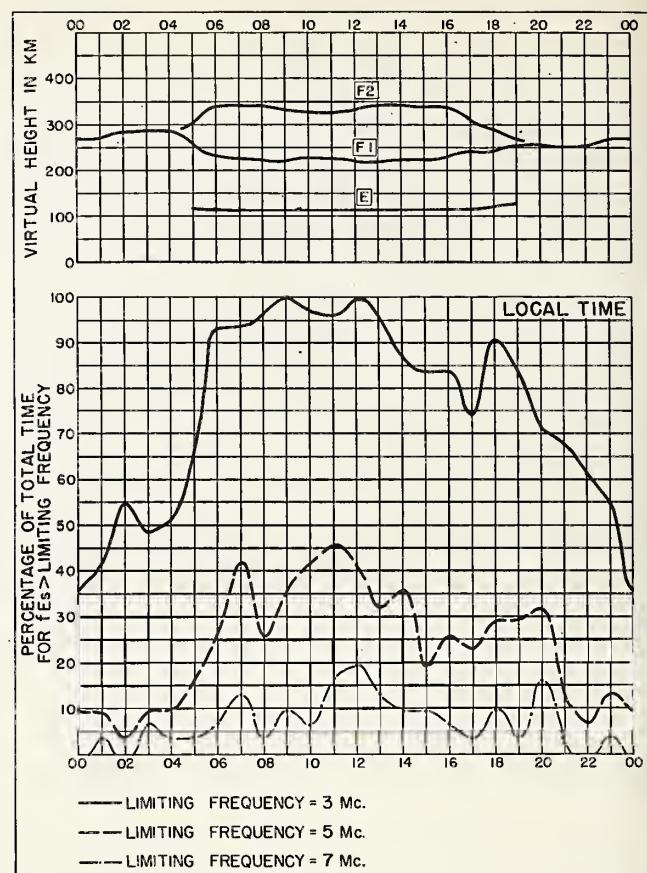


Fig. 106. SLOUGH, ENGLAND

AUGUST 1955

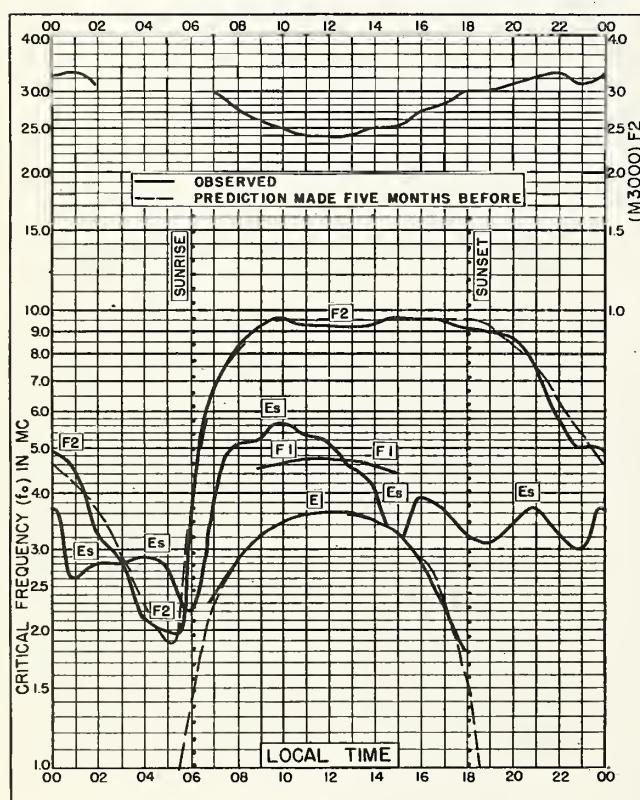


Fig. 107. SINGAPORE, BRITISH MALAYA

1.3°N, 103.8°E

AUGUST 1955

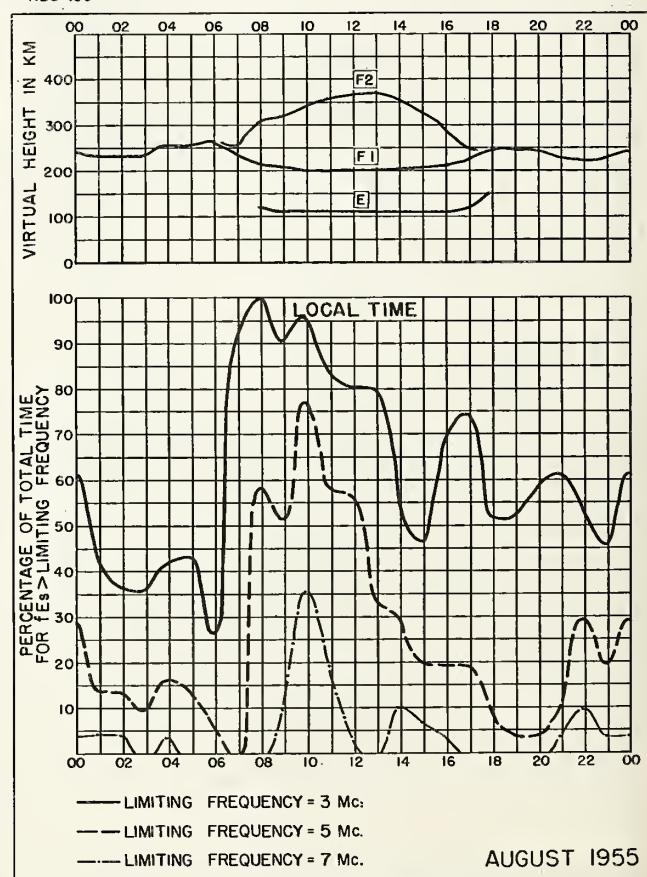


Fig. 108. SINGAPORE, BRITISH MALAYA

AUGUST 1955

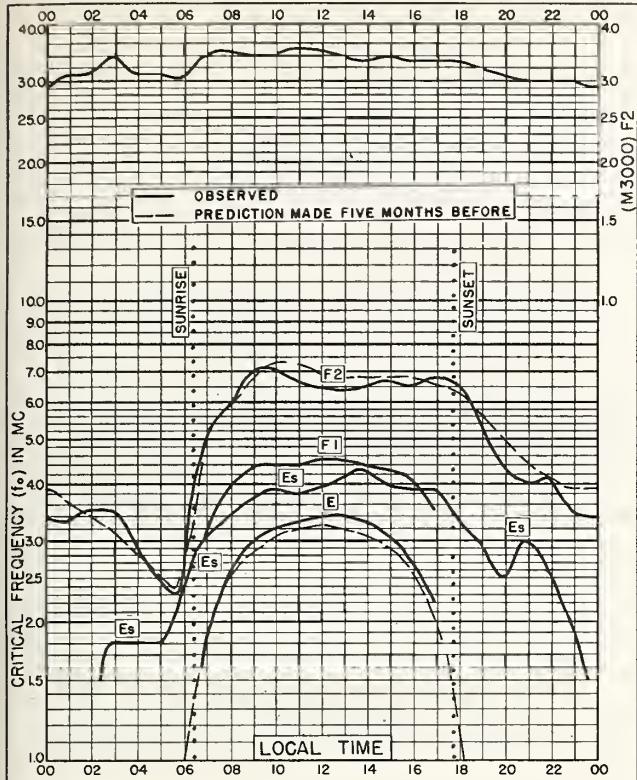


Fig. 109. RAROTONGA I.

21. 3°S, 159. 8°W

AUGUST 1955

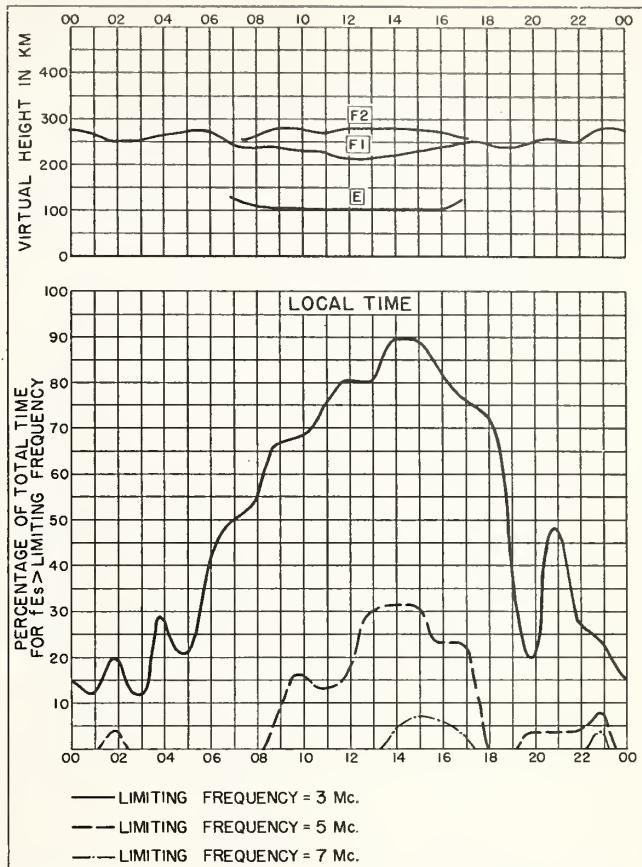


Fig. 110. RAROTONGA I.

AUGUST 1955

NBS 490

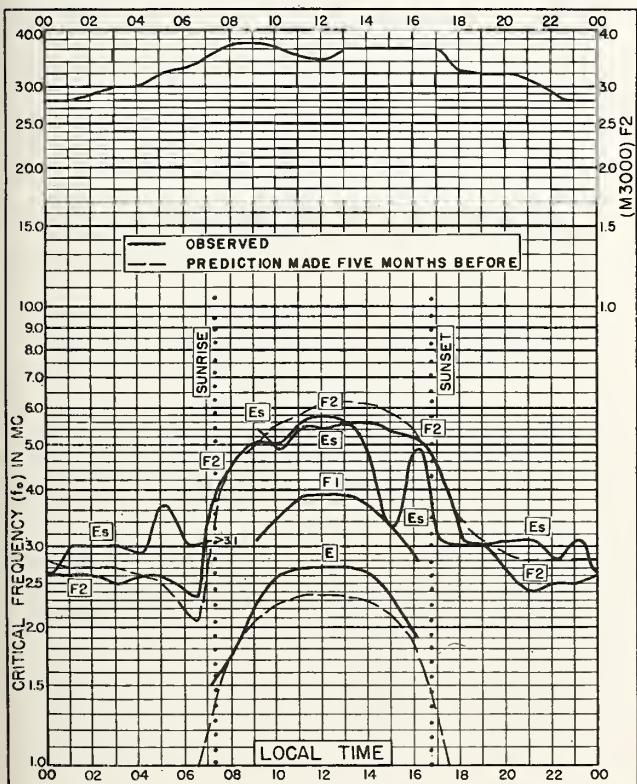


Fig. III. FALKLAND IS.

51. 7°S, 57. 8°W

AUGUST 1955

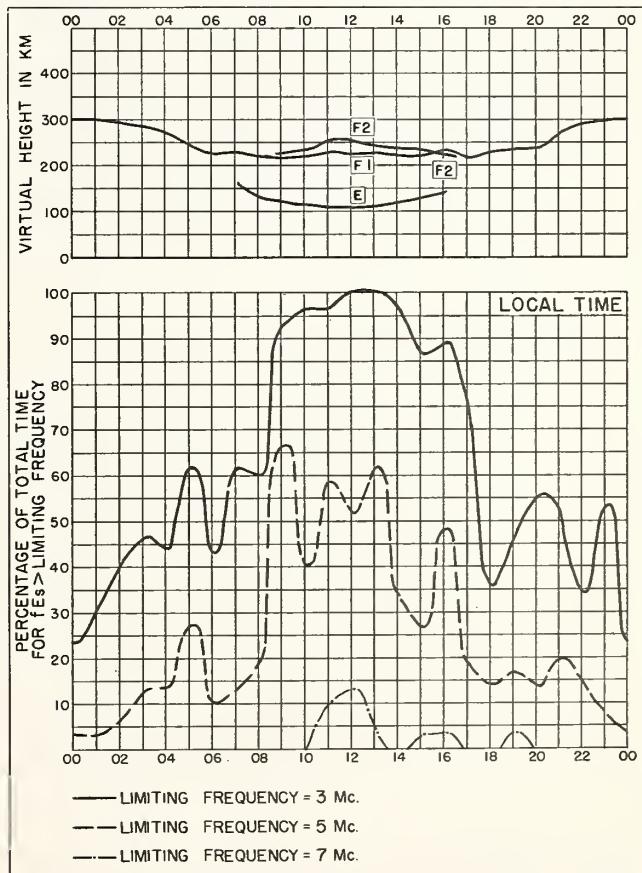
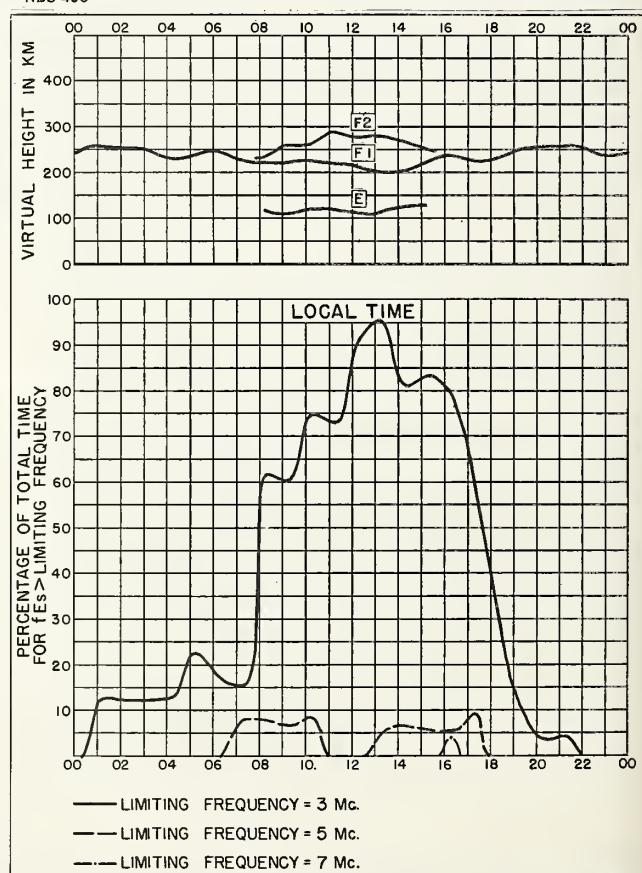
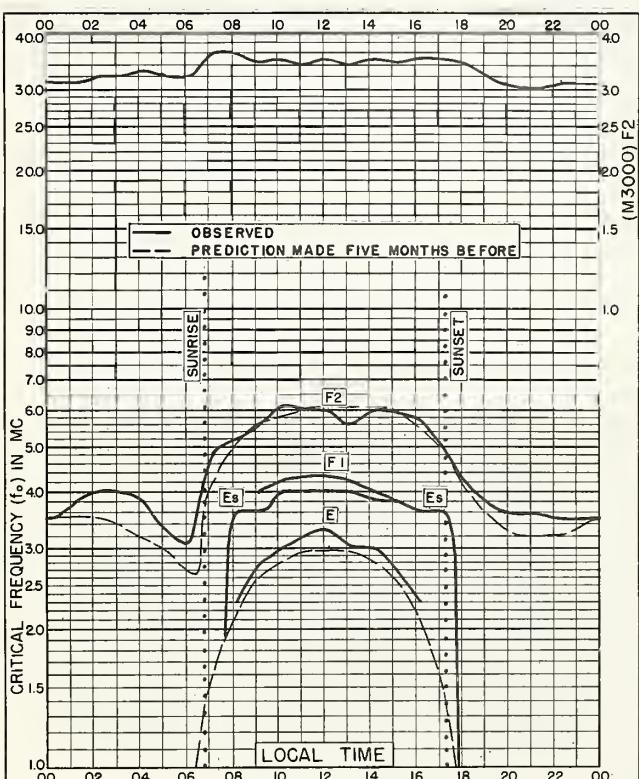
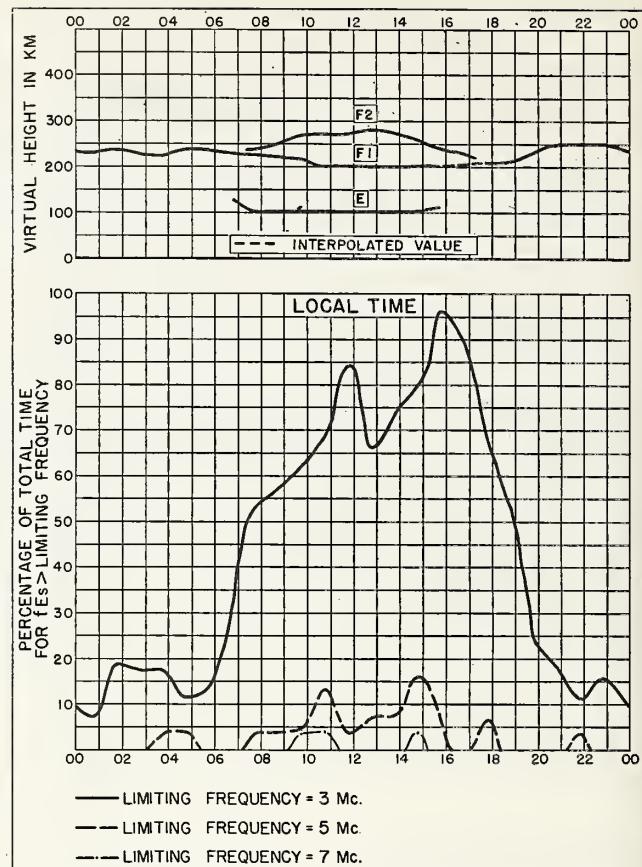
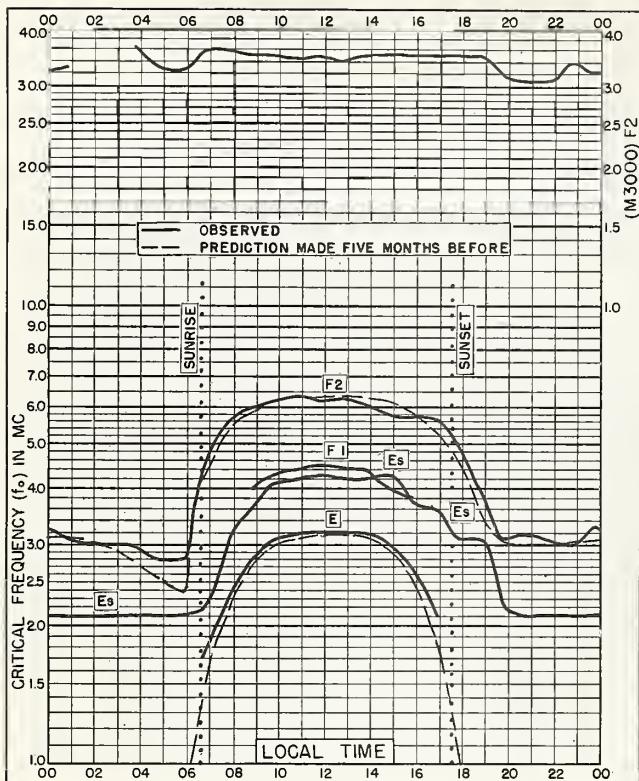


Fig. II. FALKLAND IS.

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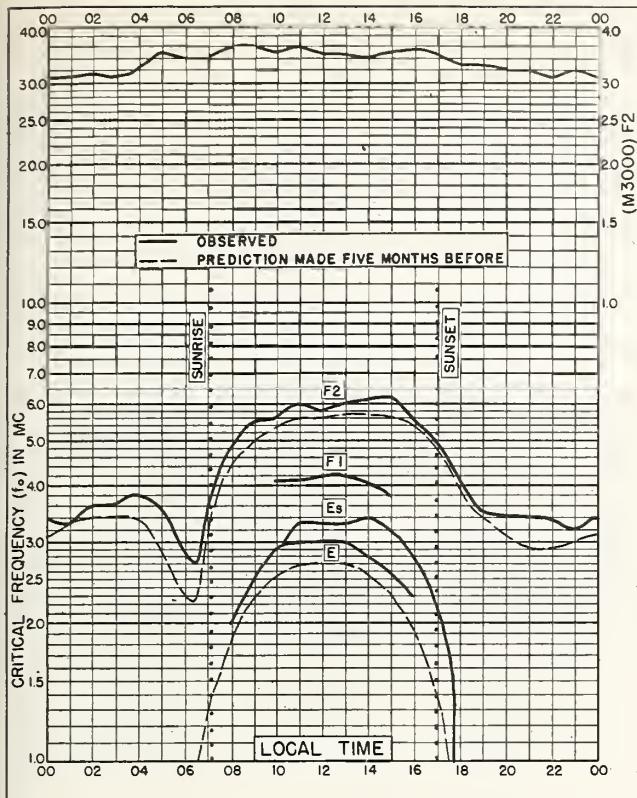


Fig. 117. CANBERRA, AUSTRALIA
35.3°S, 149.0°E JULY 1955

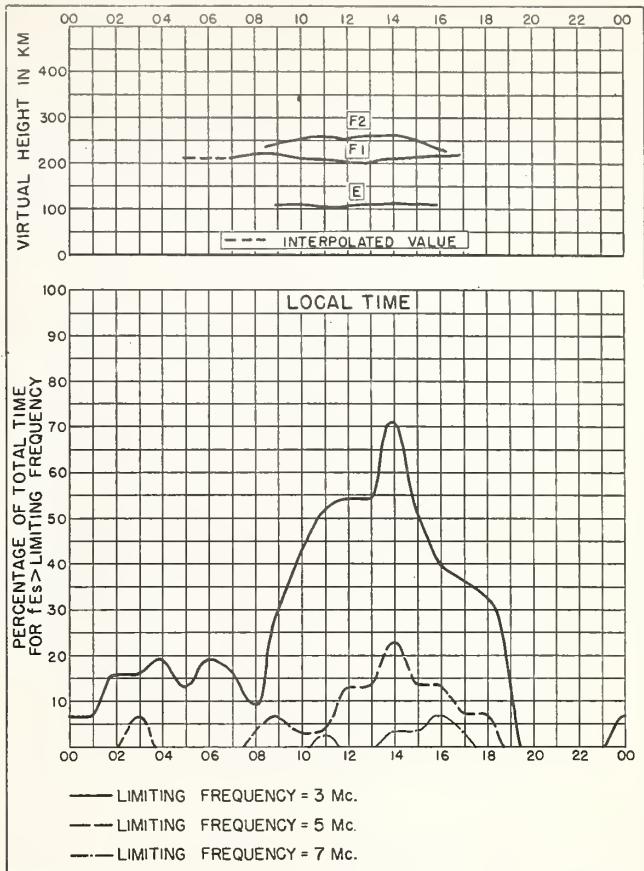


Fig. 118. CANBERRA, AUSTRALIA JULY 1955

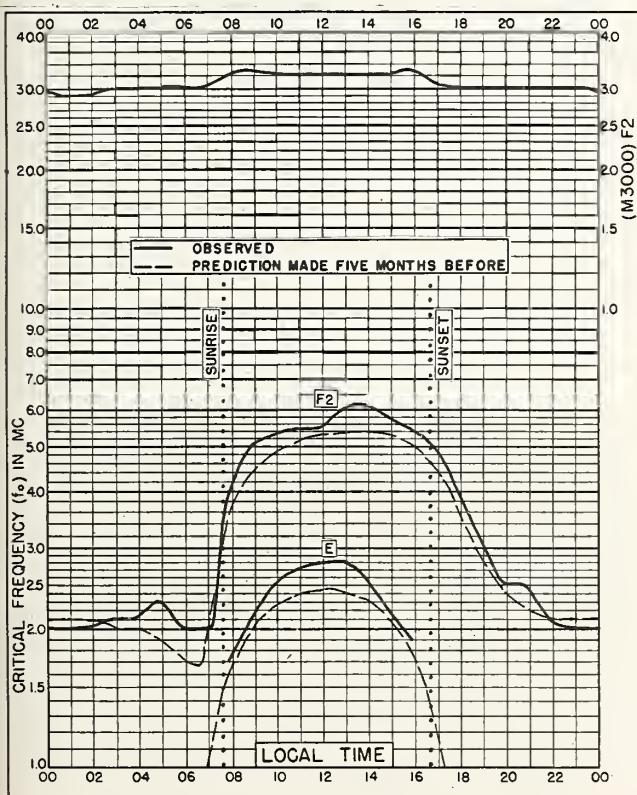


Fig. 119. HOBART, TASMANIA
42.9°S, 147.3°E JULY 1955

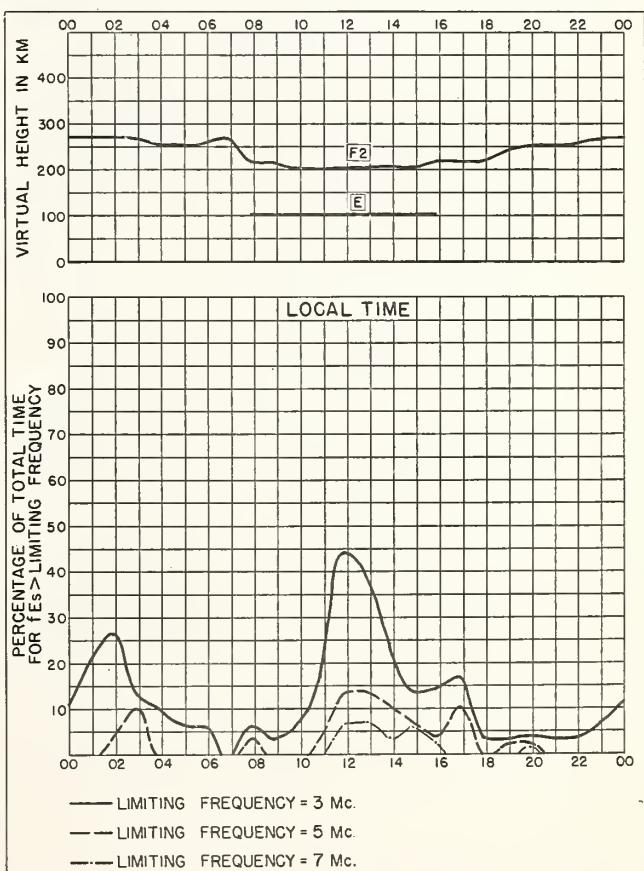


Fig. 120. HOBART, TASMANIA JULY 1955

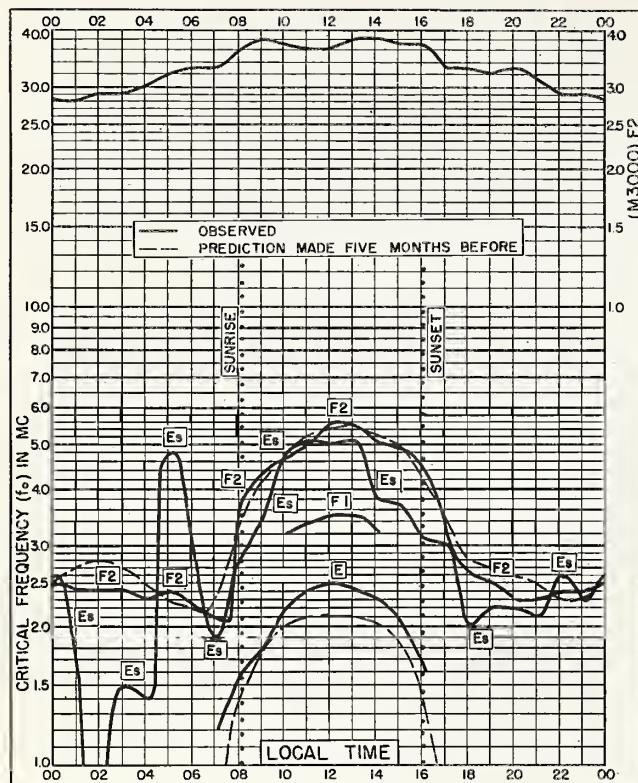


Fig. 121. FALKLAND IS.
51.7°S, 57.8°W JULY 1955

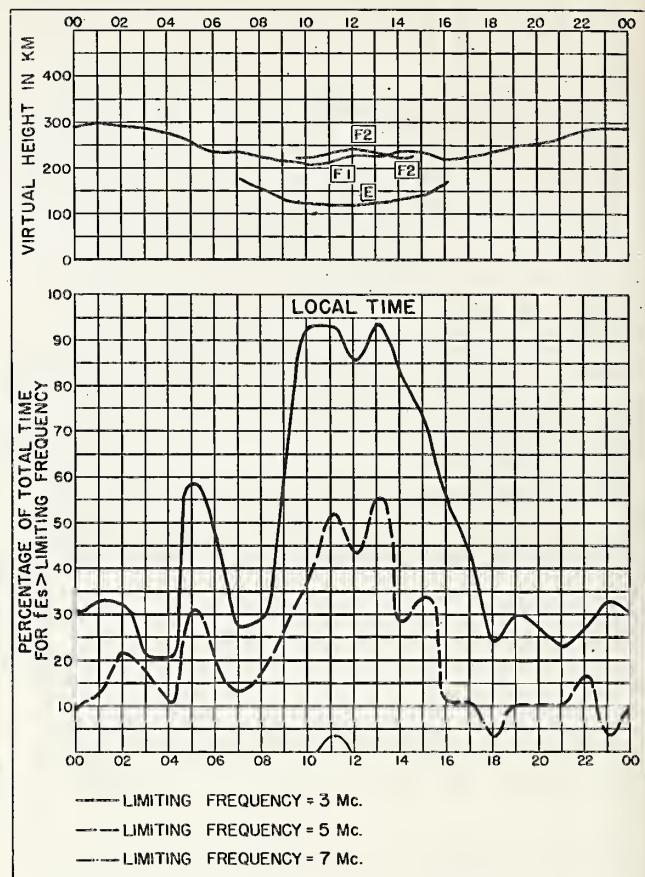


Fig. 122. FALKLAND IS. JULY 1955

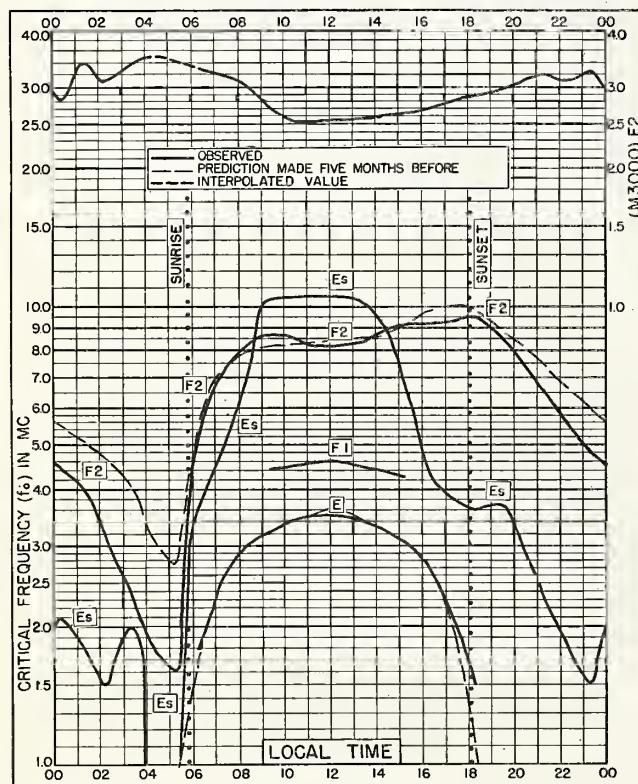


Fig. 123. IBADAN, NIGERIA
 7.4°N, 4.0°E MAY 1955

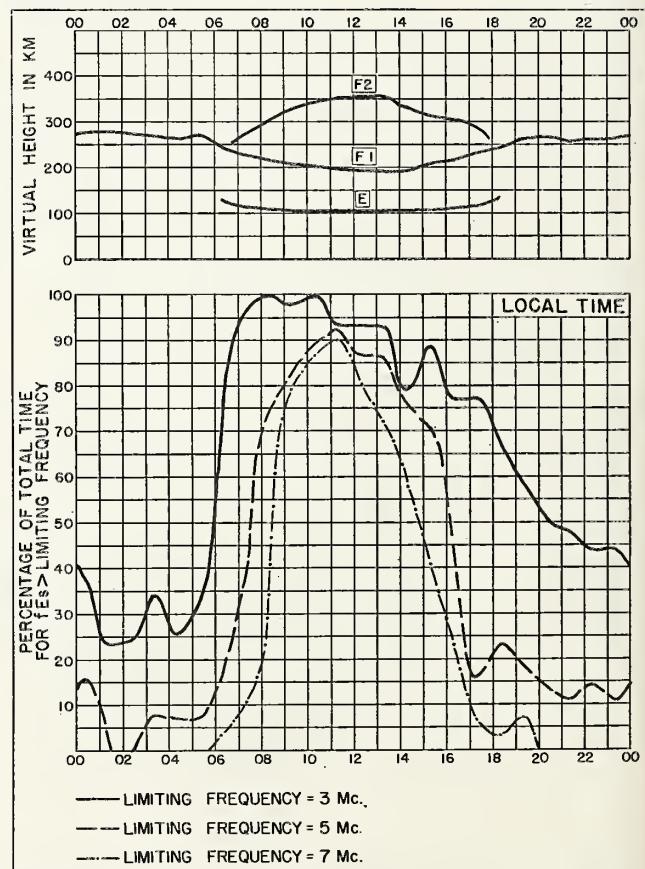


Fig. 124. IBADAN, NIGERIA MAY 1955

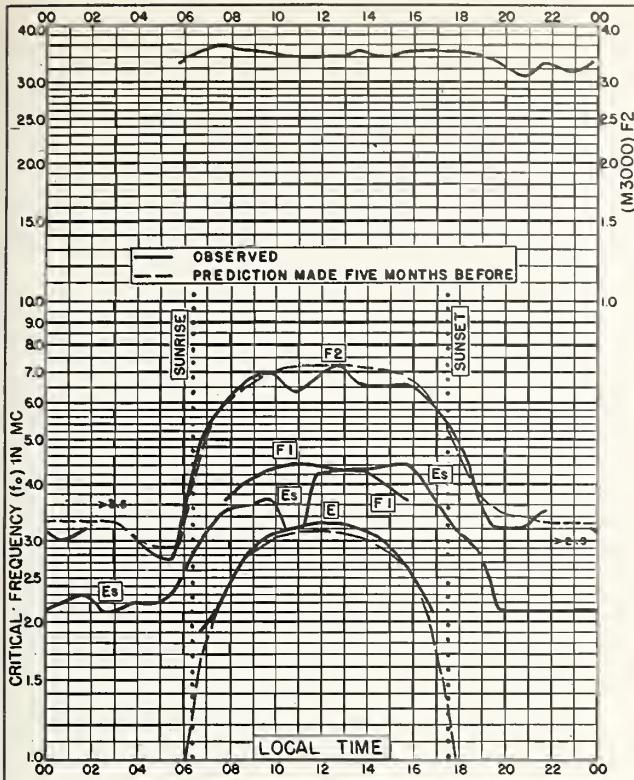


Fig. 125. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E MAY 1955

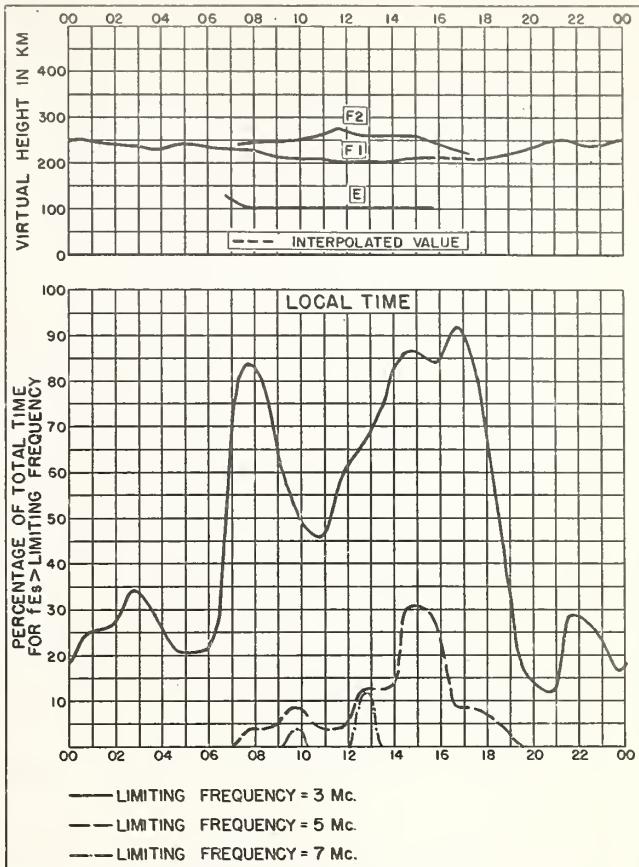


Fig. 126. TOWNSVILLE, AUSTRALIA MAY 1955

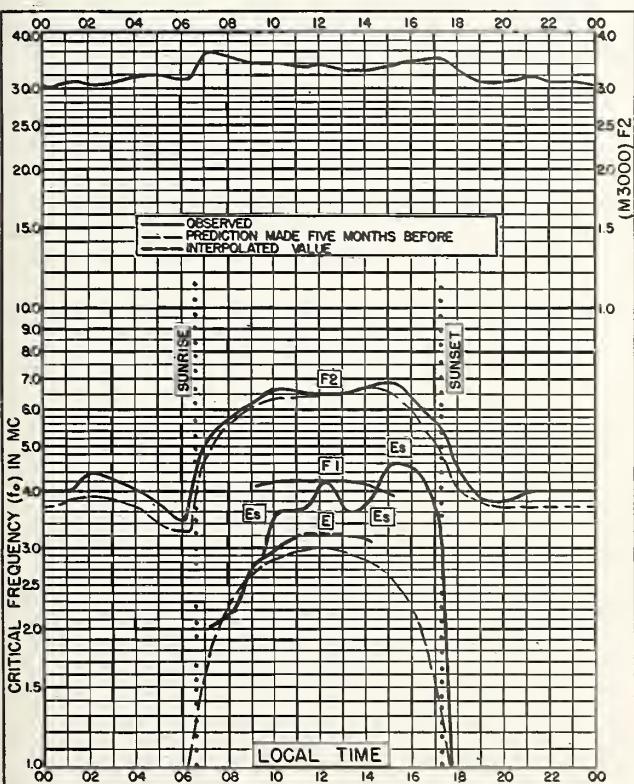


Fig. 127. BRISBANE, AUSTRALIA
27.5°S, 153.0°E MAY 1955

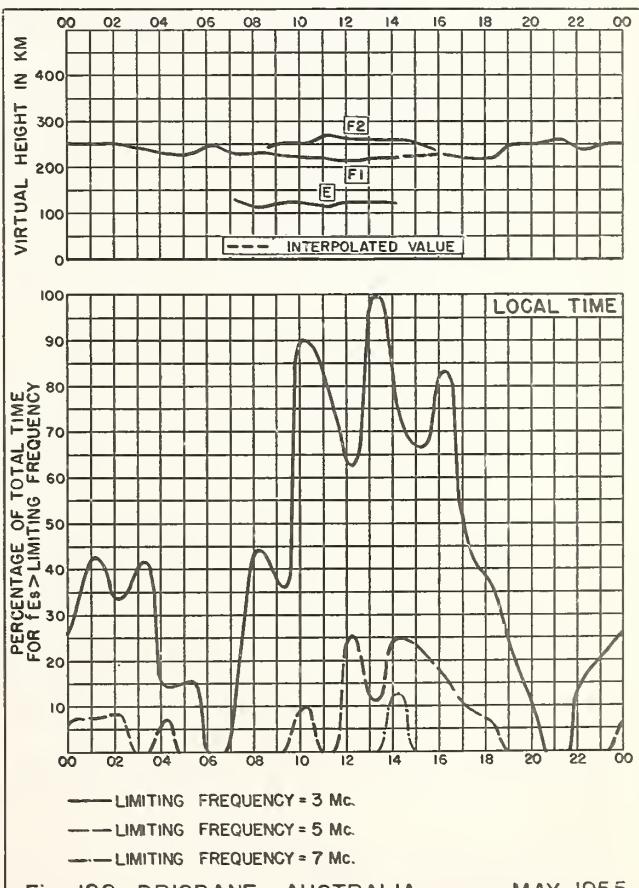


Fig. 128. BRISBANE, AUSTRALIA MAY 1955

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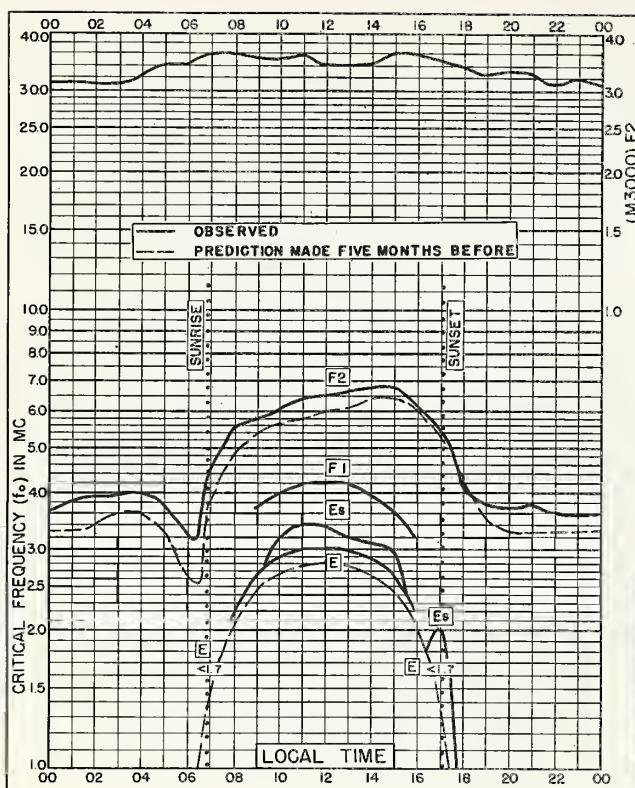


Fig. I29. CANBERRA, AUSTRALIA
35.3°S, 149.0°E MAY 1955

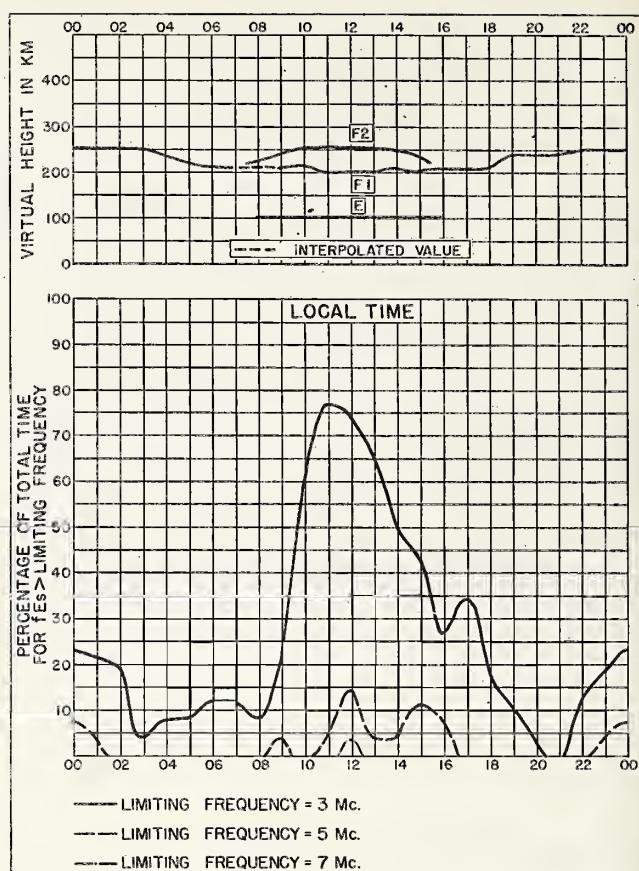


Fig. I30. CANBERRA, AUSTRALIA MAY 1955

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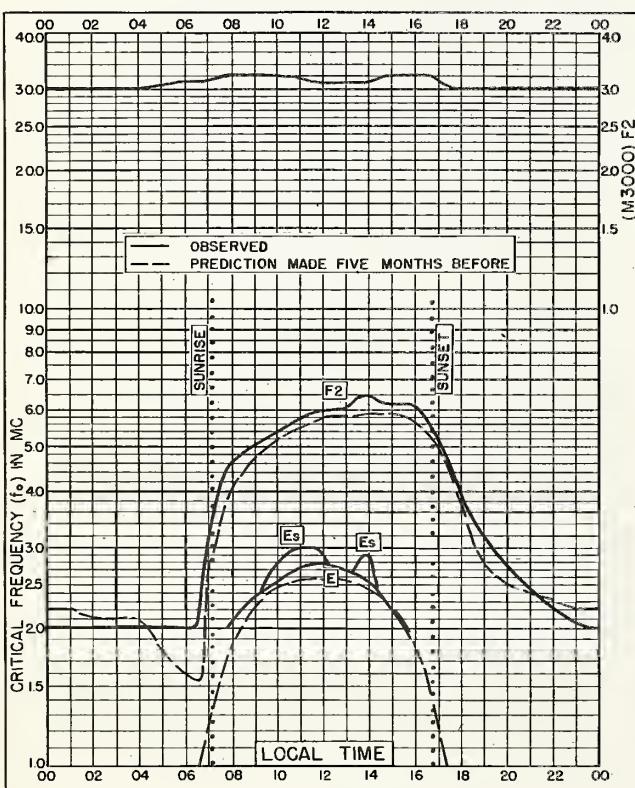


Fig. I31. HOBART, TASMANIA
42.9°S, 147.3°E MAY 1955

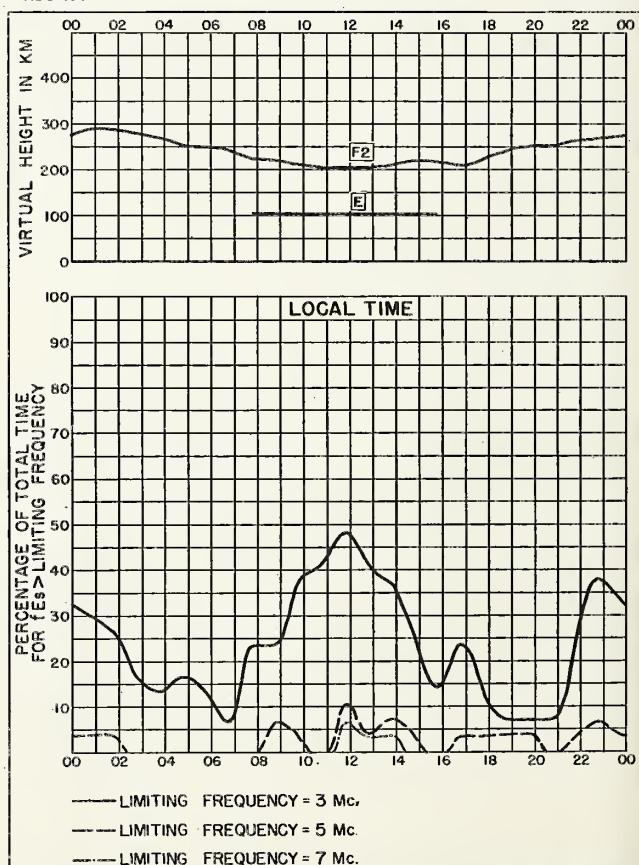


Fig. I32. HOBART, TASMANIA

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MAY 1955

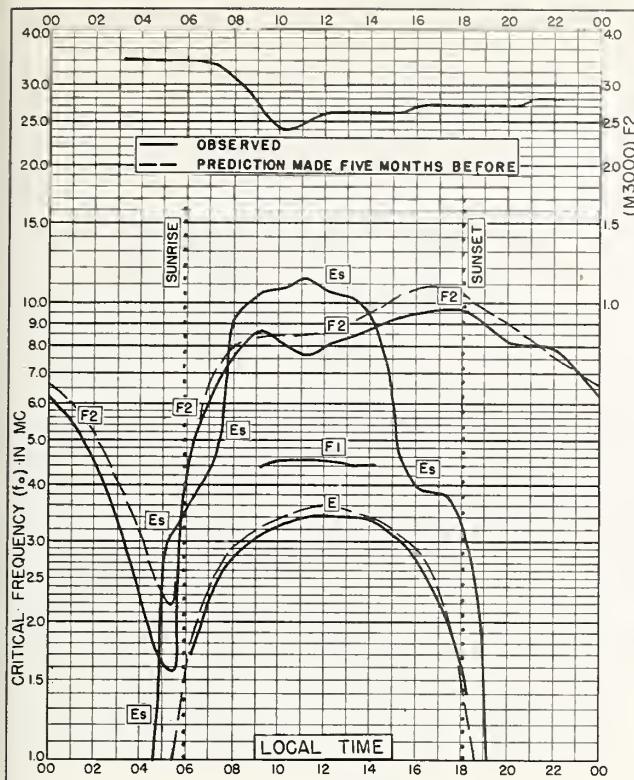


Fig. 133. IBADAN, NIGERIA
7. 4°N, 4. 0°E APRIL 1955

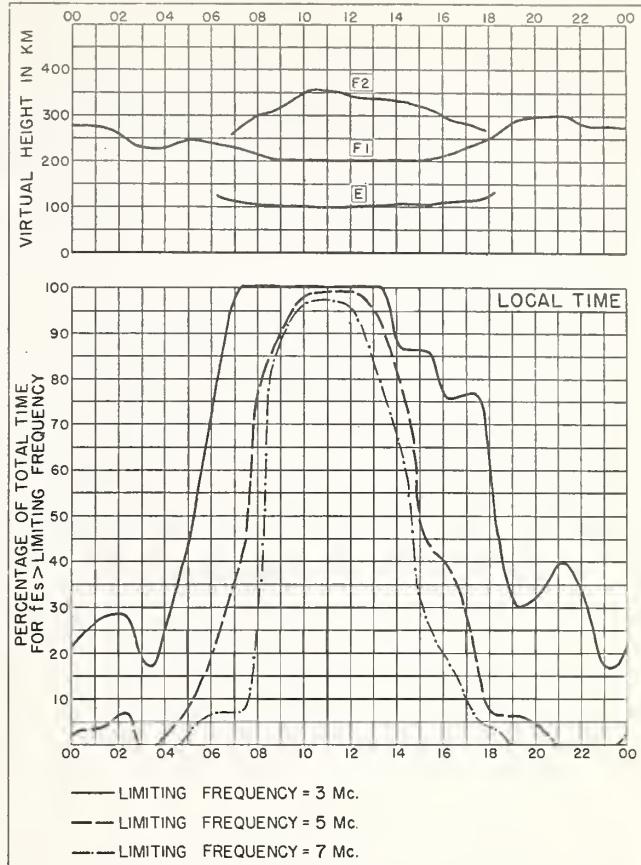


Fig. 134. IBADAN, NIGERIA APRIL 1955

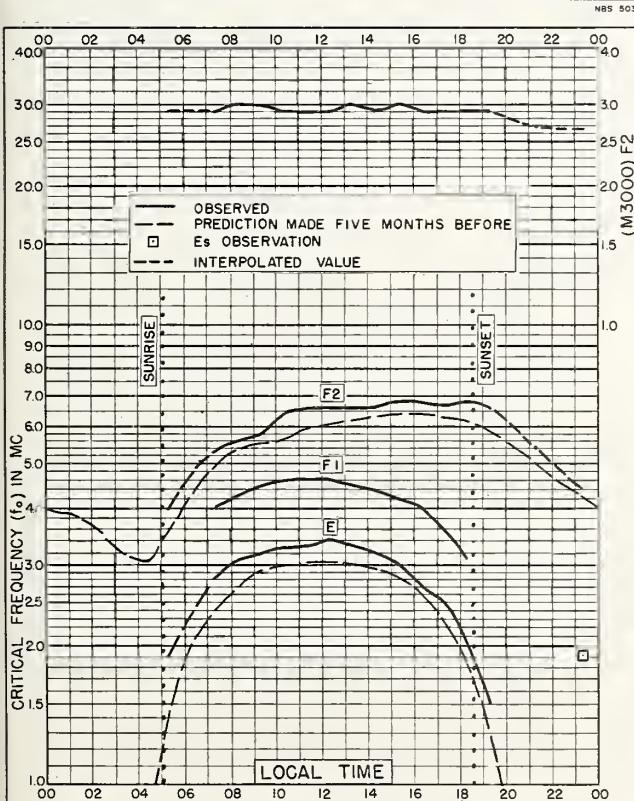


Fig. 135. CAMPBELL I.
52.5°S, 169.2°E OCTOBER 1951

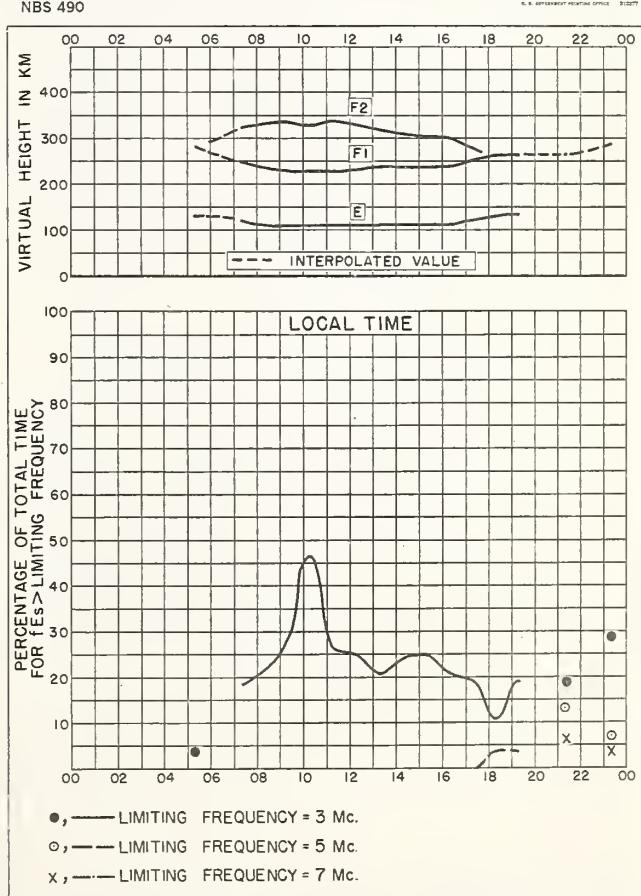


Fig. 136. CAMPBELL I. OCTOBER 1951

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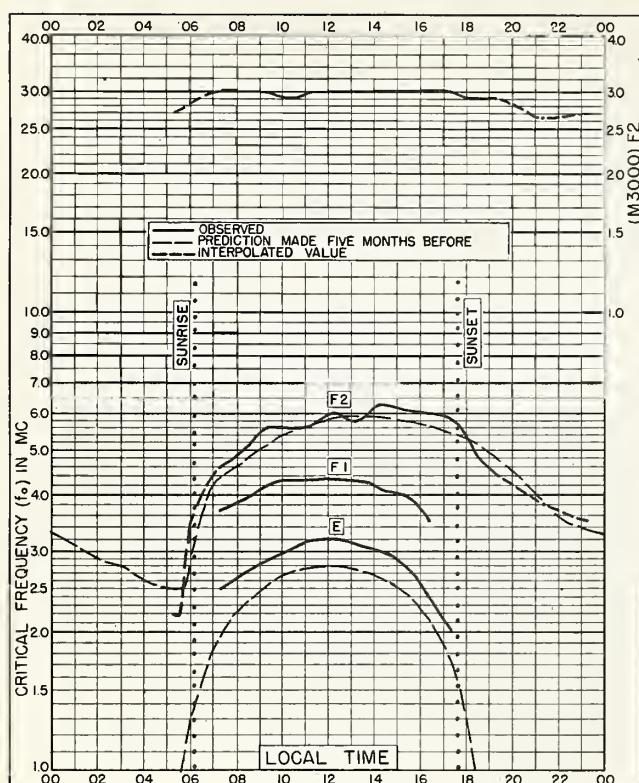


Fig. 137. CAMPBELL I.
52.5° S, 169.2° E SEPTEMBER 1951

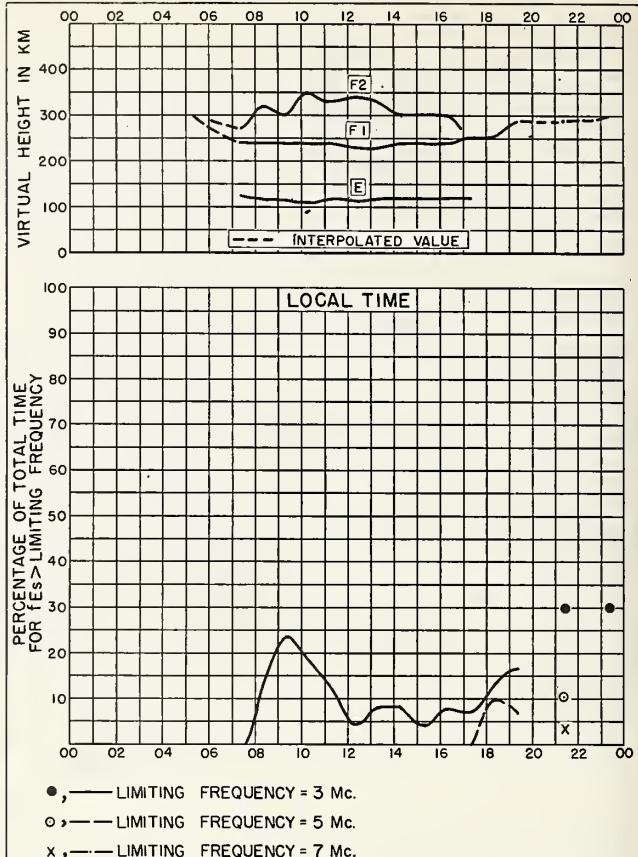


Fig. 138. CAMPBELL I. SEPTEMBER 1951

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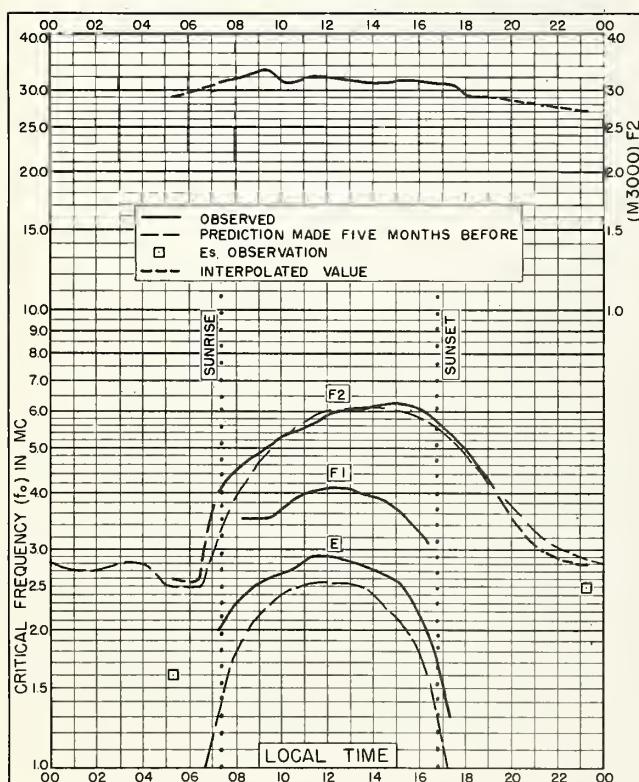


Fig. 139. CAMPBELL I.
52.5° S, 169.2° E AUGUST 1951

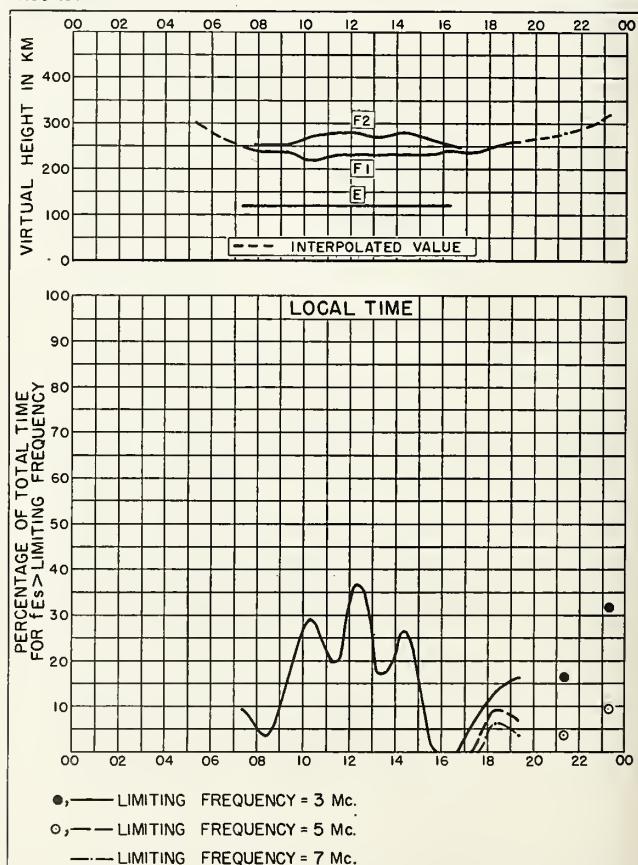


Fig. 140. CAMPBELL I.

AUGUST 1951

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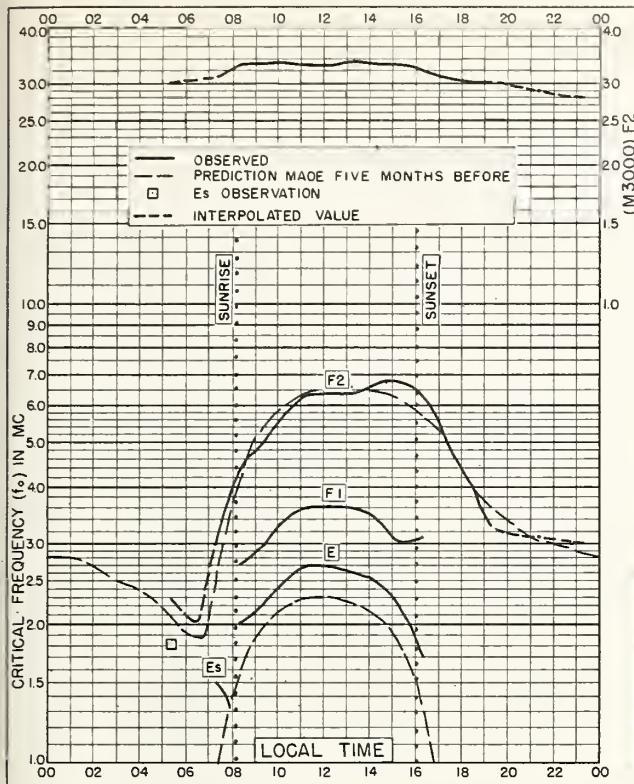


Fig. 141. CAMPBELL I.
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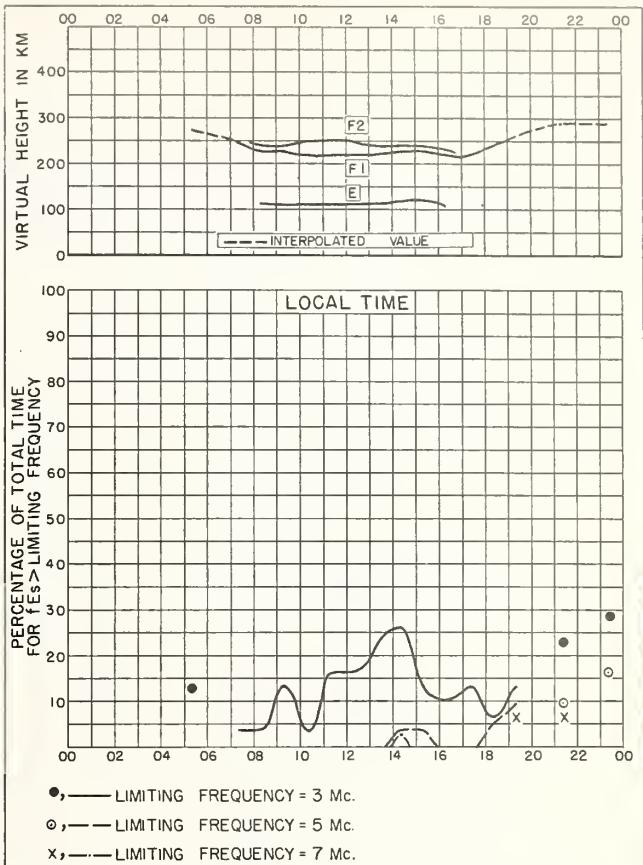


Fig. 142. CAMPBELL I. JULY 1951

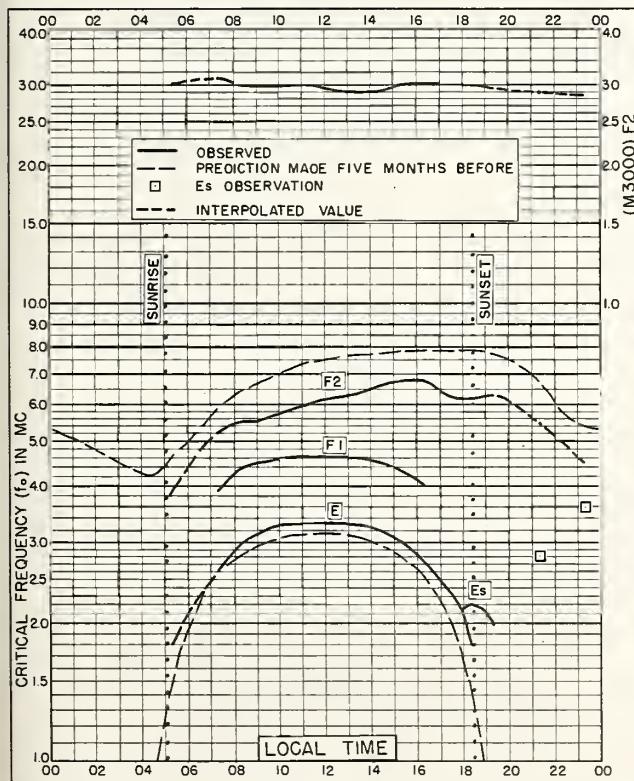


Fig. 143. CAMPBELL I.
52.5°S, 169.2°E OCTOBER 1950

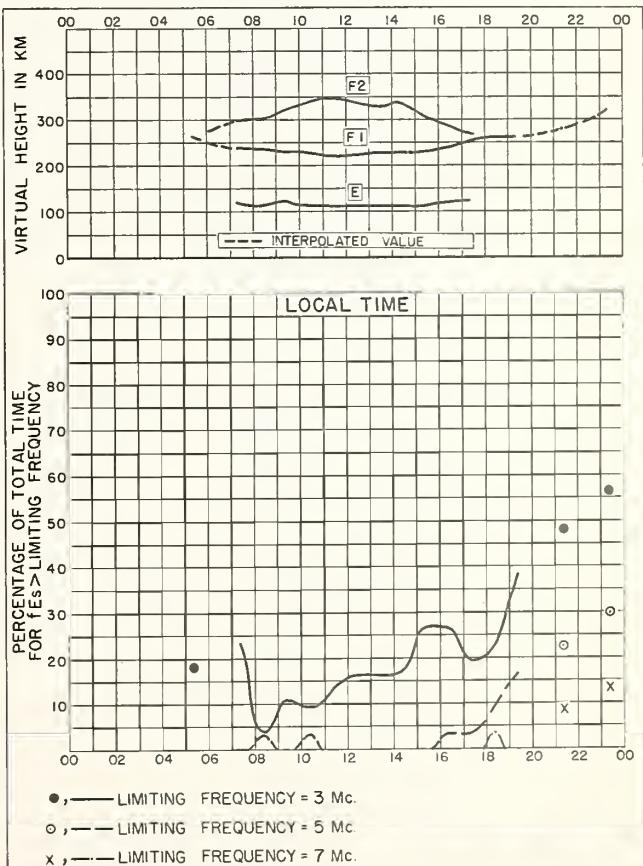


Fig. 144. CAMPBELL I. OCTOBER 1950

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CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

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CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11—499—, monthly supplements to TM 11—499; Dept. of the Navy, DNC 13 () series; Dept. of the Air Force, TO 31—3—28 series). On sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.

(Part B). Solar-Geophysical Data.

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NBS Circular 462. Ionospheric Radio Propagation.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

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